

# Service Manual

**PIONEER**  
The Art of Entertainment

• KE-1303QR



ORDER NO.  
**CRT1573**

CASSETTE CAR STEREO WITH FM/AM ELECTRONIC TUNER

# KE-1303QR

XMA/UC

# KE-1800QR

XMA/UC

# KE-2800QR

XMA/ES

# KE-2850QR

XMA/ES

# KE-2800B

XMA/EW

## Note:

- See the service manual KE-1818 (CRT1504) for the cassette mechanism description.

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# 1. SAFETY INFORMATION

● UC Model

**CAUTION**

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.

Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

**WARNING**

Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 252249.5). When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

● EW Model

**WARNING!**

Lithium batteries. Danger of explosion. Replacement must be done by qualified personnel and only by following the instructions given in the service manual.

This warning is stated on the product or in the operating instructions. When replacing the lithium batteries, follow the note below. Dispose of the used battery promptly. Keep away from children. Do not disassemble and do not dispose of in fire.

The battery used in this device may present a fire or chemical hazard if mistreated. Do not recharge, disassemble, heat above 100°C or incinerate. Replace only with the same Part Number. Use of another battery may present a risk of fire or explosion.

Note: The lithium battery installation position is shown in the exploded view and the P.C. board pattern.

**ADVARSEL!**

Lithiumbatteri – Eksplosionsfare ved fejlagtig håndtering. Udskiftning må kun ske med batteri af samme fabrikat og type. Levér det brugte batteri tilbage til leverandøren.

Denne advarsel er angivet på produktet eller i brugsvejledningen. Ved udskiftning af lithium batterierne følges nedenstående anvisning.

Batterierne må kun udskiftes med batterier af samme type og mærke.

**VARNING**

Explosionsfara vid felaktigt batteri-byte. Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren. Kassera använt batteri enligt fabrikantens instruktion.

Denna varning finns på apparaten eller i bruksanvisningen. Följ nedanstående anvisningar vid byte av litiumbatterier. Batterierna får endast bytas ut mot litiumbatterier av samma typ och fabrikat.

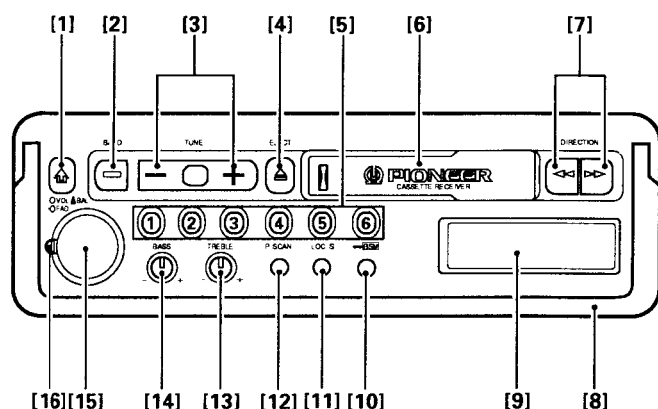


Fig. 1

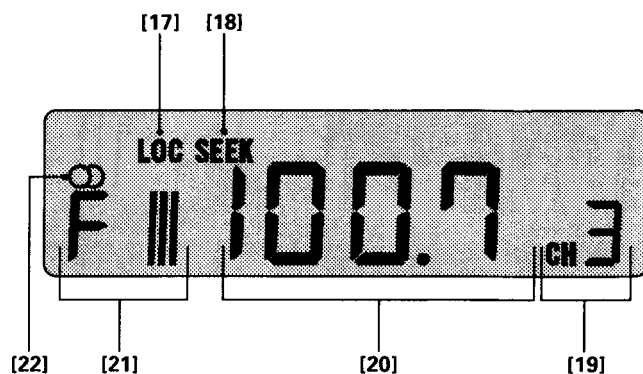


Fig. 2

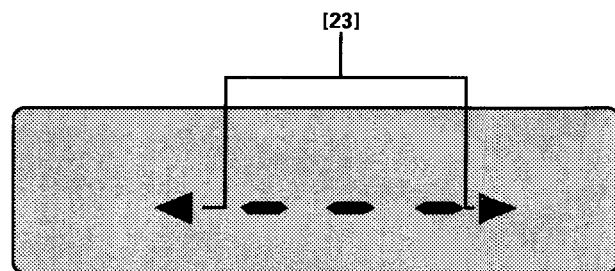


Fig. 3

## 2. USING THE RADIO

### Parts Identification

#### (Fig. 1)

- [2] Band
- [3] Tuning
- [5] Preset
- [9] Display
- [10] Best Stations Memory (BSM)
- [11] Local Station
- [12] Preset Scan
- [13] Treble
- [14] Bass
- [15] Volume / Balance / Power Switch
- [16] Fader

#### (Fig. 2)

- [17] Local Station
- [18] Seek
- [19] Preset Number
- [20] Frequency
- [21] Band
- [22] Stereo

### Listening to the Radio

#### • Before attempting operation...

- Set the fader control [16] to the left horizontal.
- 1. Turning the power switch [15] to the right causes power to switch ON and the current frequency to appear on the display [20].

- Since the set is designed preferentially for tape play, eject a cassette tape, if loaded, before operating the radio.
- 2. Press the button [2] to select the band.
- 3. Press both ends of the button [3] and the seek tuning indicator will appear on the display [18].
- 4. Press either the left or right side of the button [3] to tune in the desired frequency. (Pressing the right side will increase the frequency.)
- 5. Adjust the volume and balance. To adjust the balance, first pull the knob [15] until a click is heard. After setting to the desired level, push the knob [15] in again to its original position.
- 6. Adjust the tone [13], [14].
- To enter a frequency into the preset memory...
- 7. Hold down one of the buttons in Bank [5] for approximately 2 seconds. The frequency is stored in memory (assigned to the button in Bank [5] pressed) once the preset number stops flashing on the display [19].
- 6 FM1 frequencies, 6 FM2 frequencies, 6 FM3 frequencies and 6 AM frequencies can be entered.

### BSM (Best Stations Memory)

This function automatically locates stronger stations and automatically assigns their frequencies to the buttons in Bank [5], from strongest to weakest. It comes in handy when trying to find local stations while driving.

1. Press button [2] and select a band.
2. Holding down button [10] for about 2 seconds will start BSM search. At this time, "..." will flash on the display.
3. The frequency display will return once BSM search is complete, and frequencies are assigned to buttons 1 through 6 in Bank [5].
- At the end of the BSM search, the displayed frequency is that assigned to button 1 of Bank [5].
- If there are fewer than 6 strong stations in the area, some of the buttons in Bank [5] will not be assigned frequencies, so they will retain any frequencies assigned to them previously.
- BSM search may take as long as 30 seconds in areas where there are few strong stations.

### Fader Control

This control is used to adjust the balance between the front and rear speakers when using a 4-speaker system. Turning the control [16] upward decreases the volume of the rear speakers, while turning it downward decreases the volume of the front speakers. With 2-speaker systems, set this control [16] to horizontal.

- A considerable amount of sound will continue to be produced from speakers of a 4-speaker system which have been cut by setting the fader control either to the front speakers or rear speakers. This is normal and does not indicate malfunction.

### Preset Scan Tuning

This function lets you automatically monitor the stations assigned to the preset buttons.

1. Press the button [12], and the preset number [19] flashes.  
Each station assigned to the buttons in Bank [5] will be automatically tuned in for about 8 seconds.
2. When you hear a station that you like, press button [12] again to cancel preset scan tuning and remain at that station.

### Adjusting Seek Sensitivity

The seek tuning function of this tuner lets you select between a local setting for reception of strong stations only, and a DX (distant) setting for reception of weaker stations. The local setting also has four seek tuning sensitivity levels for FM and 2 levels for AM to match local conditions.

#### Changing the Local Seek Sensitivity

1. Use button [2] to select a band.
  2. Hold down the button [11] for more than 2 seconds, and the display will show you the current local seek sensitivity for about 5 seconds.
  3. While the local seek sensitivity remains on the display, press the (+) side of button [3] to increase the sensitivity level, and the (-) side to decrease the level as shown below.  
FM : L-1  $\rightleftharpoons$  L-2  $\rightleftharpoons$  L-3  $\rightleftharpoons$  L-4  
AM : L-1  $\rightleftharpoons$  L-2  
The L-4 setting allows reception of only the strongest stations, while lower settings let you receive progressively weaker stations.
- The display of local seek sensitivity returns to the frequency when about 5 seconds have elapsed after the change of sensitivity.

### Switching between Local and DX

Press button [11] to switch between Local and DX (distant) seek tuning. When "LOC" [17] is shown on the display, seek tuning is performed with the local seek sensitivity. Otherwise, seek tuning is performed with the DX seek sensitivity.

### Manual Tuning

Use manual tuning when stations are too weak to be picked up by seek tuning.

1. Press both (+) and (-) sides of button [3] at the same time to clear "SEEK" [18].
2. Each press of the (+) side of button [3] increases the frequency in 0.2 MHz steps in the FM band, 10 kHz in the AM band. Pressing the (-) side of button [3] decreases the frequency. Holding down either side of button [3] changes the frequency at high speed.

## 3. USING THE TAPE DECK

### Parts Identification

(Fig. 1)

- [4] Eject
- [6] Cassette Door
- [7] Fast Forward, Rewind / Direction Change
- [9] Display
- [13] Treble
- [14] Bass
- [15] Volume / Balance / Power Switch
- [16] Fader

(Fig. 3)

- [23] Direction

#### About cassette tapes

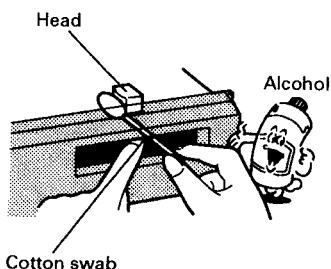
- Do not use tapes longer than C-90-type (90 min.) cassettes. Longer tapes can interfere with tape transport.
- Storing cassettes in areas directly exposed to sunlight or high temperatures can distort them and subsequently interfere with tape transport.



- Store unused tapes in a tape case where there is no danger of them becoming loose or being exposed to dust.

#### Cleaning the head

If the playback head becomes dirty, sound quality will suffer. Periodically (once or twice a month) clean the head with a cotton swab soaked with alcohol.



### Listening to a tape

- Before attempting operation...
- Set the fader control [16] to the left horizontal.
- 1. Turning the power switch [15] to the right causes power to switch ON.
- 2. Loading a cassette tape into the load slot [6] causes playback to begin automatically.
- 3. Adjust the volume and balance. To adjust the balance, first pull the knob [15] until a click is heard. After setting to the desired level, push the knob in [15] again to its original position.
- 4. Adjust the tone [13], [14].
- 5. When tape playback reaches the end of the tape, playback will automatically switch from the side being played to the opposite side (ie. Side A to Side B or vice versa) (Auto-reverse). To eject the tape during playback, press the button [4].
- A loose or warped label on a cassette tape may interfere with the eject mechanism of the unit or cause the cassette to become jammed in the unit. Avoid using such tapes or remove such labels from the cassette before attempting use.
- Do not try to eject the cassette immediately after insertion, as it will cause malfunction. Wait a few seconds.
- Loose tapes should be rewound with the aid of a pencil and unevenly wound tapes rewound with the use of the fast forward function.



## 4. CONNECTING THE UNITS

- Be sure to eject the tape when the vehicle's ignition is turned OFF. Leaving the tape in the unit can deform the pinch roller causing wow and flutter during tape playback.

### Changing Program

Push the fast forward and rewind buttons [7] together to switch from one side of the tape to the other (from Side A to Side B or vice versa).

### Using Fast Forward and Rewind

Press the fast forward button (the right side of button [7] shown in Fig. 1) to advance the tape at high speed and the rewind button (the left side of button [7]) for high speed return. In fast-forward, the tape automatically switches from one side to the other when it reaches the end of the tape, and begins play from the other side (Auto-reverse). In rewind, the tape automatically starts play after rewinding all the way back to the beginning of the tape (Auto-replay). When you release fast forward / rewind, lightly press button [7] located on the opposite side of the one you pressed to fast forward or rewind.

### Note:

- This unit is for vehicles with a 12-volt battery and negative grounding. Before installing it in a recreational vehicle, truck, or bus, check the battery voltage.
- To avoid shorts in the electrical system, be sure to disconnect the battery  $\ominus$  cable before beginning installation.
- Refer to the owner's manual for details on connecting the various cords of the power amp and other units, then make connections correctly.
- Secure the wiring with cable clamps or adhesive tape. To protect the wiring, wrap adhesive tape around them where they lie against metal parts.
- Route and secure all wiring so it cannot touch any moving parts, such as the gear shift, handbrake, and seat rails. Do not route wiring in places that get hot, such as near the heater outlet. If the insulation of the wiring melts or gets torn, there is a danger of the wiring short-circuiting to the vehicle body.
- Do not shorten any leads. If you do, the protection circuit may fail to work when it should.
- Never feed power to other equipment by cutting the insulation of the power supply lead of the unit and tapping into the lead. The current capacity of the lead will be exceeded, causing overheating.

- Don't pass the orange lead through a hole into the engine compartment to connect to the battery. This will damage the lead insulation and cause a very dangerous short.
- Replace fuses only with the types stipulated on the fuse holder.

### • KE-1303QR, KE-2850QR

#### 2-speaker system (Fig. 4)

#### 4-speaker system (Fig. 5)

1. Antenna jack
2. Black (ground)  
To vehicle (metal) body.
3. Red  
To electric terminal controlled by ignition switch (12 V DC) ON / OFF.
4. Fuse holder
5. Blue  
Auto-antenna relay control terminal (Max. 300 mA 12 V DC).
6. Green
7. Gray
8. Green / red
9. Gray / red
10. Black
11. Left speaker
12. Right speaker
13. Front / left speaker
14. Front / right speaker
15. Rear / left speaker
16. Rear / right speaker
17. Not connected to anything for 2-speaker system.

### • KE-1800QR, KE-2800QR, KE-2800B

#### 2-speaker system (Fig. 6)

#### 4-speaker system 1 (Fig. 7)

#### 4-speaker system 2 (Fig. 8)

1. Antenna jack
2. Black (ground)  
To vehicle (metal) body.
3. Red  
To electric terminal controlled by ignition switch (12 V DC) ON / OFF.
4. Fuse holder
5. Blue  
To system control terminal of the power amp or Auto-antenna relay control terminal (Max. 300 mA 12 V DC).
6. Blue
7. Rear out
8. Red
9. White
10. Connecting cords with RCA pin plugs (sold separately)
11. Power amp (sold separately)
12. Green
13. Gray
14. Green / red
15. Gray / red
16. Black
17. Left speaker
18. Right speaker
19. Front / left speaker
20. Front / right speaker
21. Rear / left speaker
22. Rear / right speaker
23. Not connected to anything for 2-speaker system.
24. No connection in this type of system.

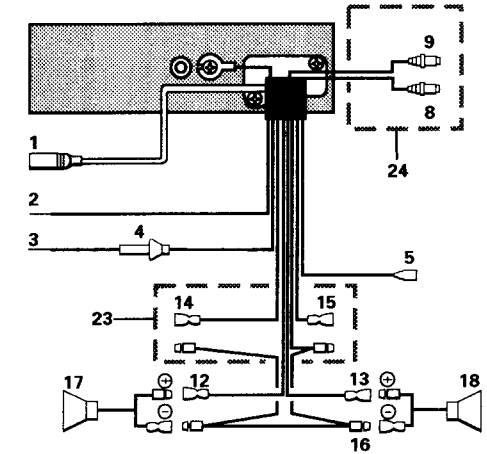


Fig. 6

### KE-1303QR, KE-2850QR

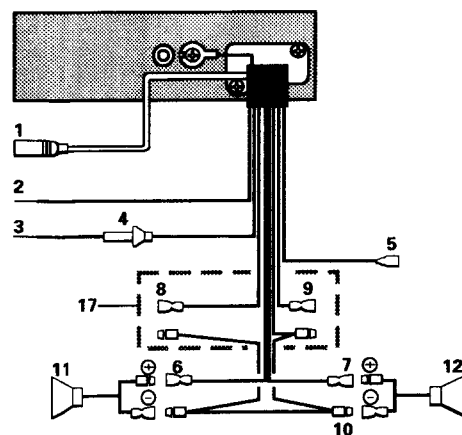


Fig. 4

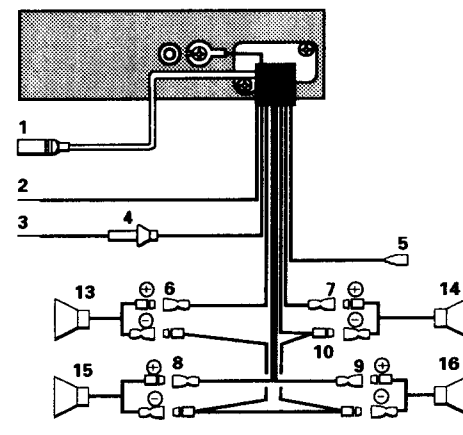


Fig. 5

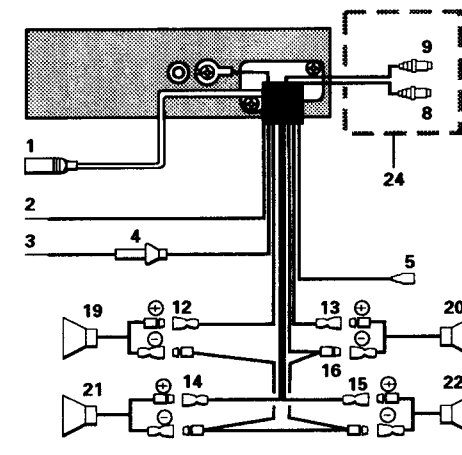


Fig. 7

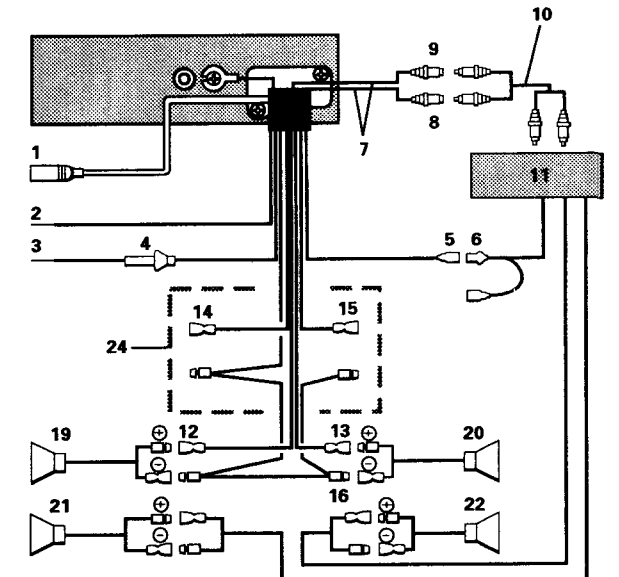


Fig. 8

- Connect to the front speakers with the green and gray leads. If you connect with the green/red and gray/red leads, this unit's fader control will not operate.

## 5. BLOCK DIAGRAM

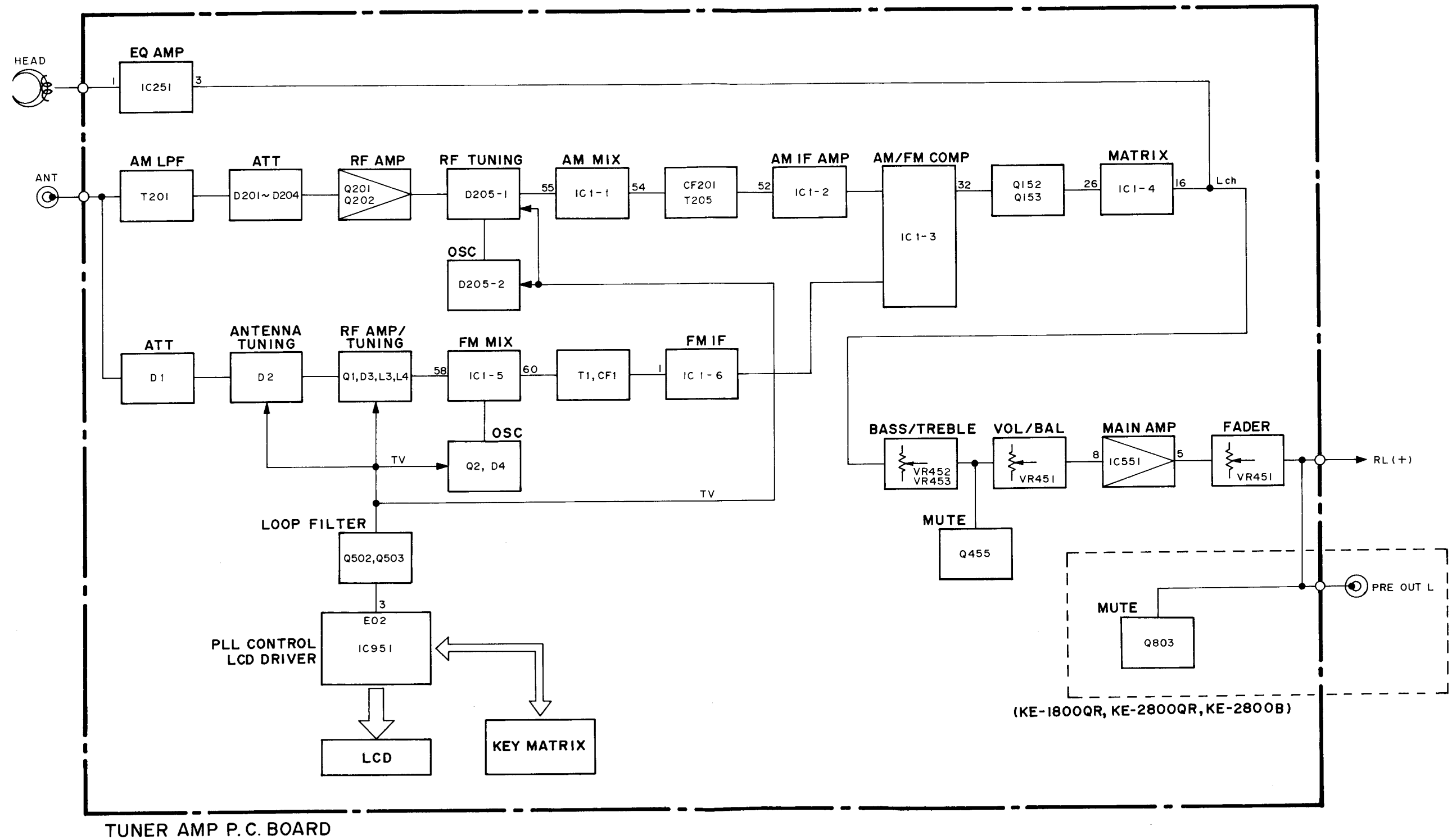


Fig. 9

## 6. DISASSEMBLY

### ● Removing the Case

1. Insert and turn a screwdriver to remove the case.
2. Raise the case to remove.

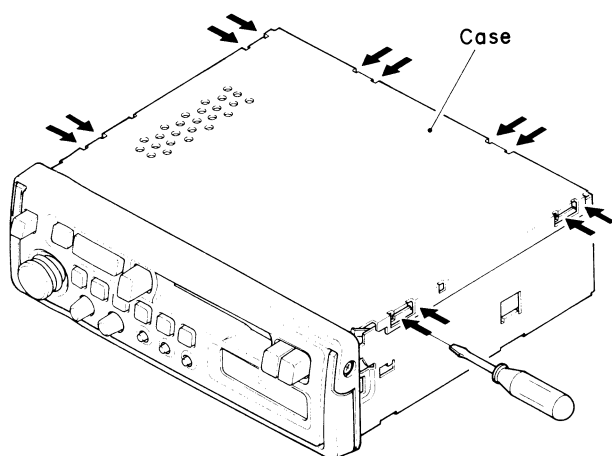


Fig. 10

### ● Removing the Handle

1. Remove the two screws, and then remove the handle.

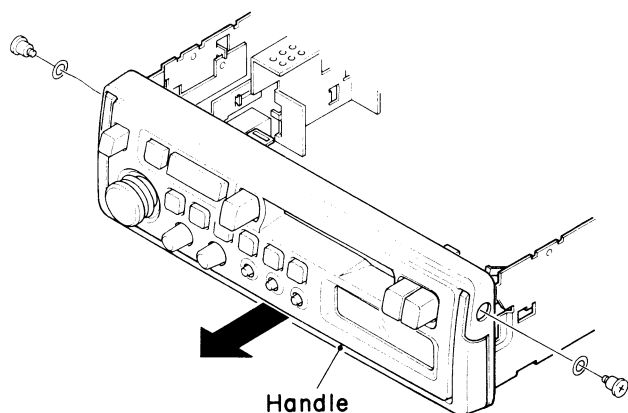


Fig. 11

### ● Removing the Grille Assy

1. Remove the two knobs.
2. Press the tabs at four locations, and then pull out the grille assy.

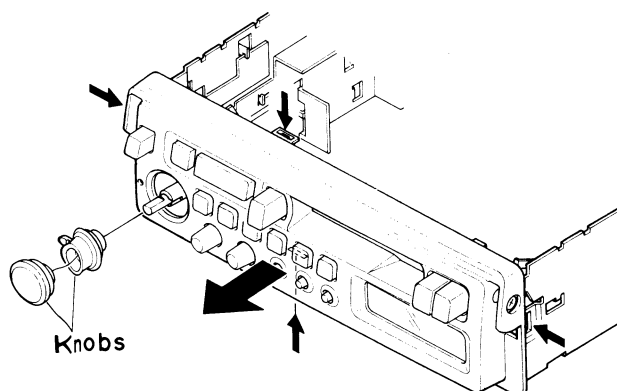


Fig. 12

### ● Removing the Cassette Mechanism Assy

1. Disconnect the connector.
2. Remove the four screws A and four screws B.
3. Remove the cassette mechanism assy.

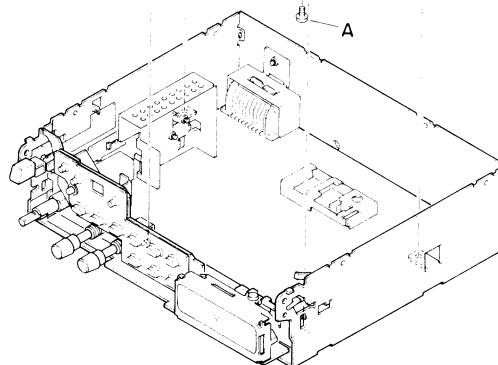
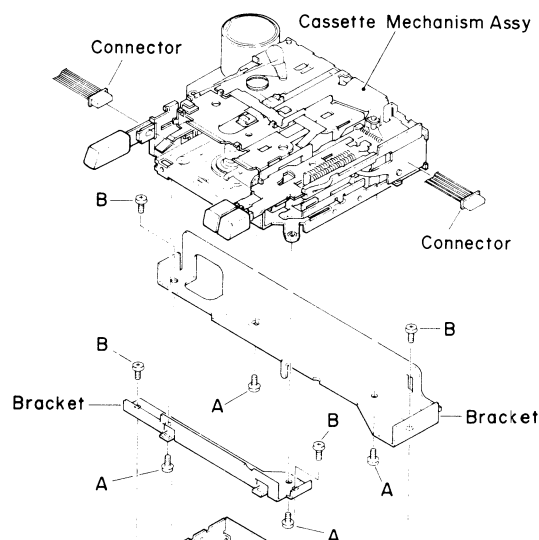


Fig. 13

### ● Removing the Tuner Amp Unit

1. Remove the four screws C.
2. Raise up tuner amp unit to remove it from the chassis unit.

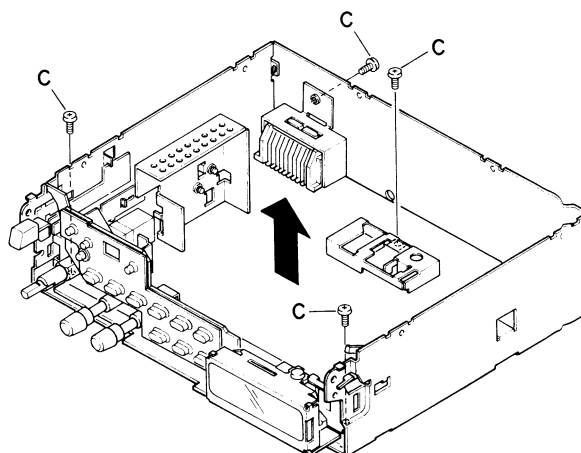


Fig. 14

7. ADJUSTMENT

**NOTICE:**  
Select C1 so that total capacity of 80pF is attained from the direction of the receiver jack.  
Z: Output impedance of SSG.

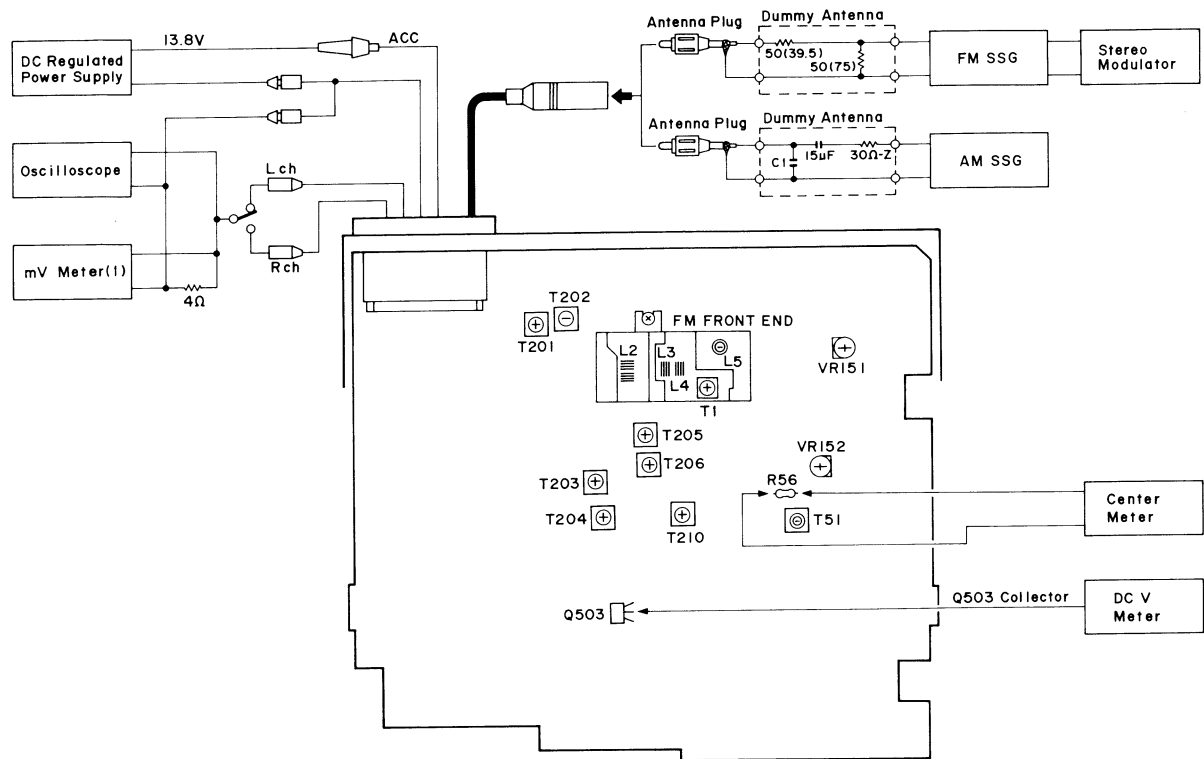


Fig. 15

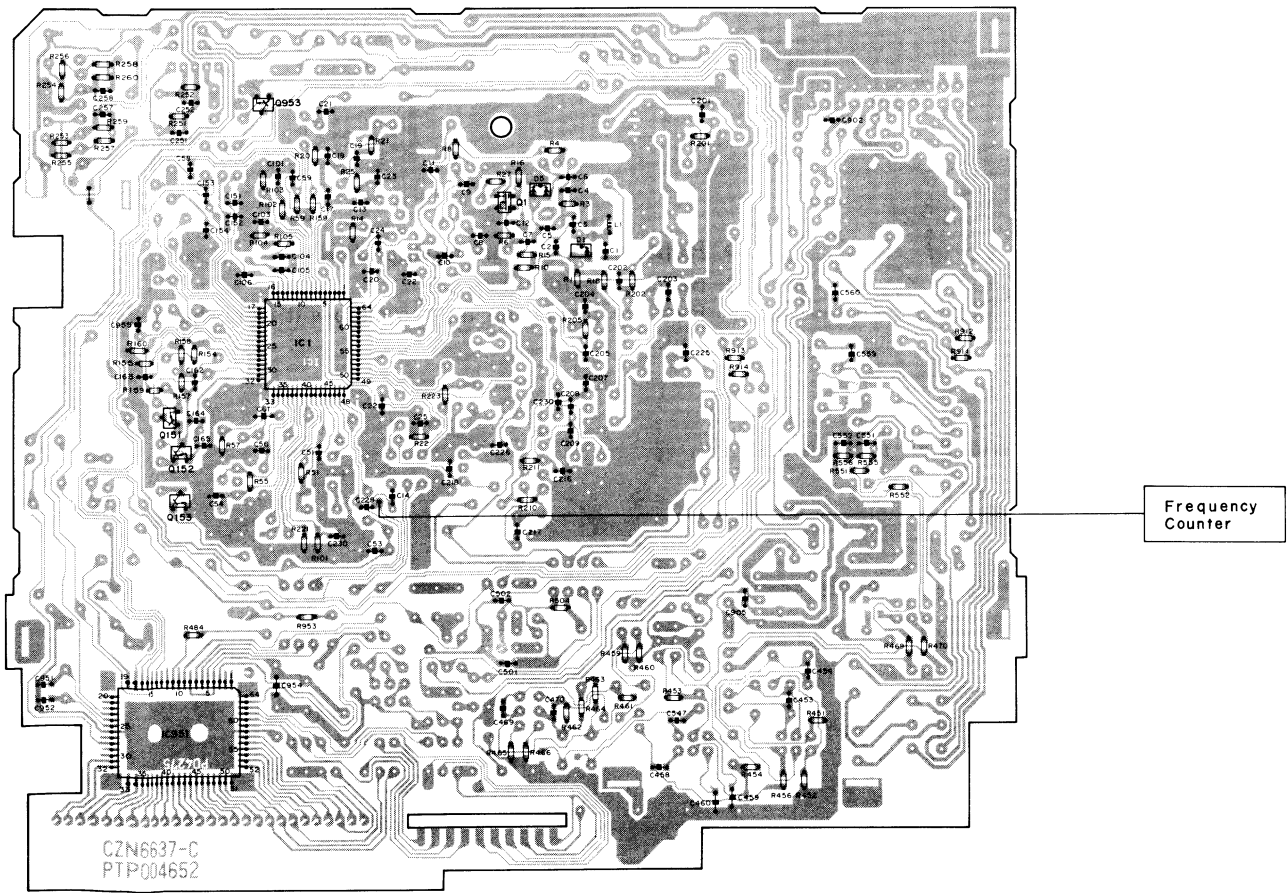


Fig. 16

## FM ADJUSTMENT

\*1 Stereo MOD.: Pilot=10%

\*2 Stereo MOD.: 1kHz, L+R=90%, Pilot=10%

	No.	FM SSG(400Hz, 100%)		Displayed Frequency (MHz)	Adjusting Point	Adjustment Method (Switch Position)
		Frequency (MHz)	Level (dBf)			
Tuning Volt	1	—	—	107.9 (UC) 108.0 (ES)	L5	DC V Meter: 6.5±0.2V
Tracking	1	98.1	15	98.1	L2, L4	mV Meter(1): Maximum
	2	98.1	15	98.1	T1	mV Meter(1): Maximum
IF	1	98.1 Unmodulated	65	98.1	T51	Center Meter: 0
Pilot Cancel	1	98.1 *1	65	98.1	VR151	mV Meter(1): Minimum (MPX Filter: OFF)
ARC	1	98.1 *2	40	98.1	VR152	mV Meter(1): Separation 5dB

## AM ADJUSTMENT

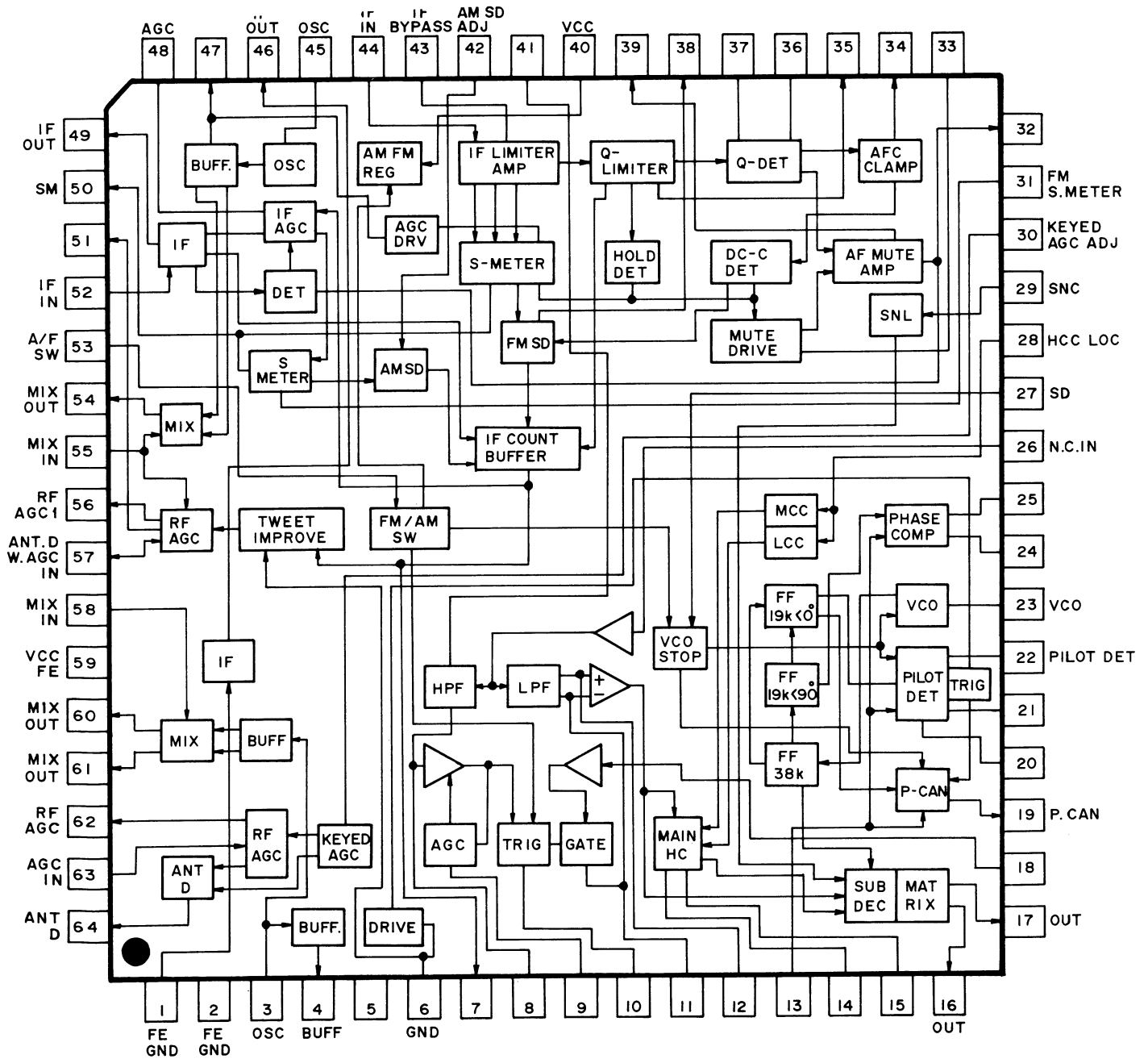
\*3: ES model when tuning step at 9kHz.

	No.	AM SSG (400Hz, 30%)		Displayed Frequency (kHz)	Adjusting Point	Adjustment Method (Switch Position)
		Frequency (kHz)	Level (dBμV)			
Tuning Volt	1	—	—	530 (531) *3	T210	DC V Meter: 0.9±0.2V
Tracking	1	1,000 (999) *3	20	1,000 (999) *3	T203, 204, 205, 206	mV Meter(1): Maximum

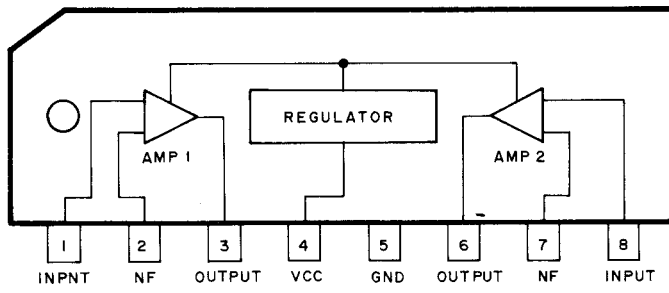
# KE-1303QR/1800QR/2800QR/2850QR/2800B

## • ICs

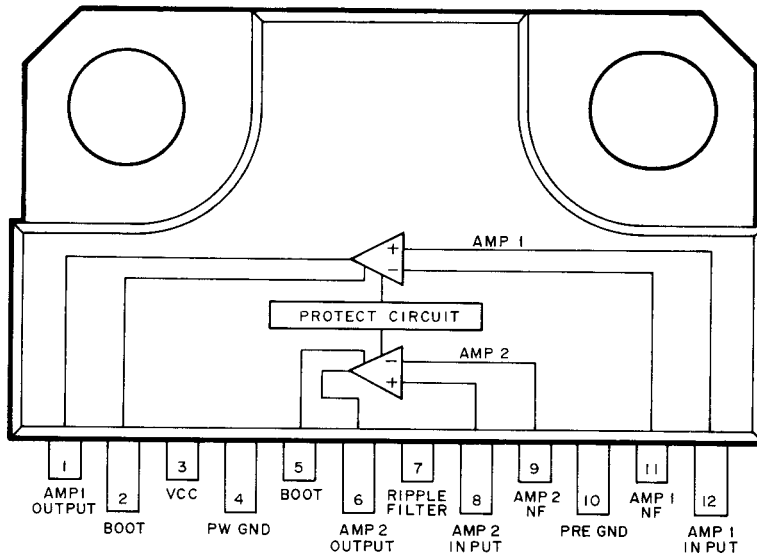
### LA1883M



## LA3161P



## TA7281P



• Pin Function (PD4275B)

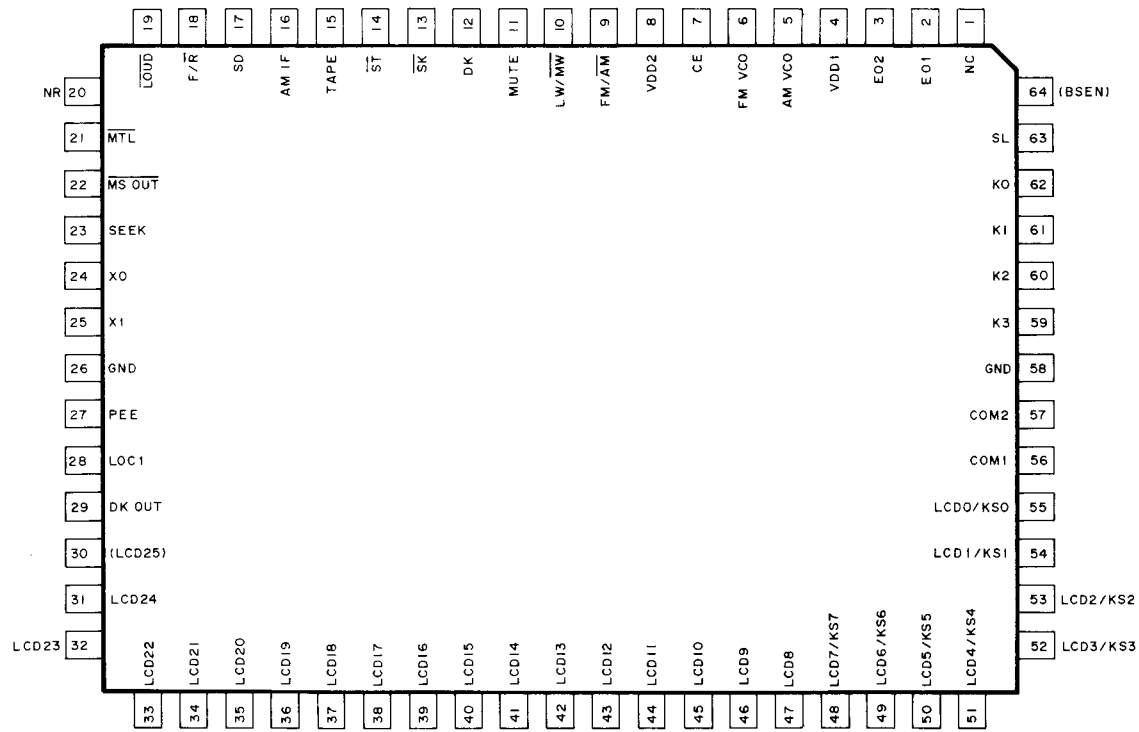
Pin No.	Pin Name	I/O	Output Format	Function and Operation
1	NC		C	Not used
2 3	EO1 EO2	Output	C (3)	PLL error output pins
4 8	VDD1 VDD2			Device power supply pin
5	AMVCO	Input		AM local oscillator signal input pin
6	FMVCO	Input		FM local oscillator signal input pin
7	CE	Input		Chip enable input pin
9	FM/AM	Output	C	FM/AM band select pin "H": FM "L": AM
10	LW/MW	Output	C	Loop filter switching output pin "H": LW
11	MUTE	Output	C	Mute output pin "H": ON
12	DK	Input		DK signal input pin
13	SK	Input		SK signal input pin
14	ST	Input		Stereo broadcast detection signal input pin "L": Stereo indicator is displayed
15	TAPE	Input		Tape power ON/OFF input pin "H": ON
16	AMIF	Input		AM IF signal input pin
17	SD	Input		FM SD input "H": During broadcast reception
18	F/R	Input		Tape motion signal input pin "H": Forward
19	LOUD	Input		Loudness ON/OFF signal input pin "L": ON
20	NC	Output	C	Not used
21	MTL	Output	C	Tape METAL ON/OFF output pin "L": ON
22	MSOUT	Output	C	Tape MS ON/OFF output pin "L": ON
23	SEEK	Output	C	"H" level: SEEK, BSM, BSA and PSCAN
24 25	XO XI	Output Input	C	Quartz oscillator terminal
26	GND			GND terminal
27	PEE	Output	C	Alarm output pin
28	LOC1	Output	C	Halt sensitivity switching pin "L": DX SEEK (P. SCAN) "H": LOC SEEK
29	DKOUT	Output	C	Control by DK (terminal #12) input signal "H": DK input signal is detected as 125Hz
30	NC			Not used

Pin No.	Pin Name	I/O	Output Format	Function and Operation
31   55	LCD24   LCD0	Output	C	Segment signal output pins to LCD
48   55	KS7   KS0	Output	C	Key matrix strobe output pins
56 57	COM1 COM2	Output	C	Common signal output pins to LCD
58	GND			Ground
59   62	K3   K0	Input		Key matrix return input pins
63	SL	Input		AM station level analog input pin
64	NC		C	Not used

Output format	Meaning
C	C-MOS
C (3)	C-MOS (3 State)

IC's marked by \* are MOS type.  
Be careful in handling them because they are very liable to be  
damaged by electrostatic induction.

\*PD4275B





## D



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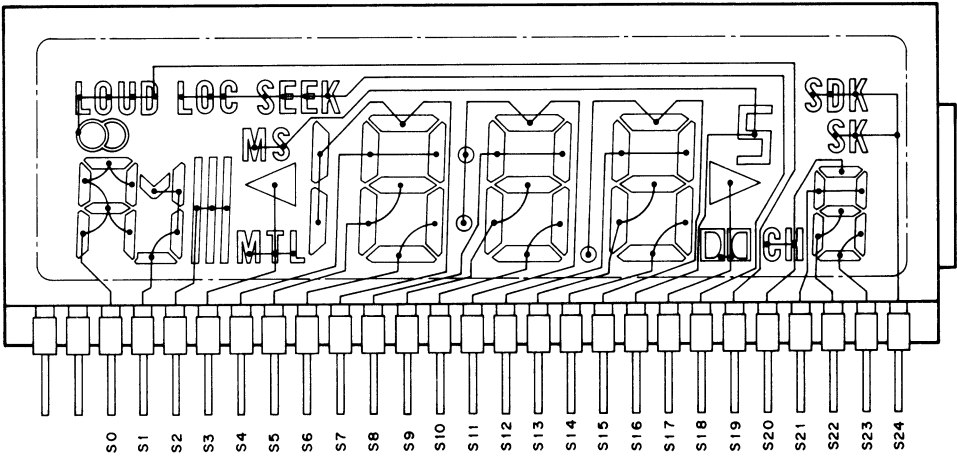
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Tuner Amp Unit
Consists of
• Tuner Amp P. C. Board

A

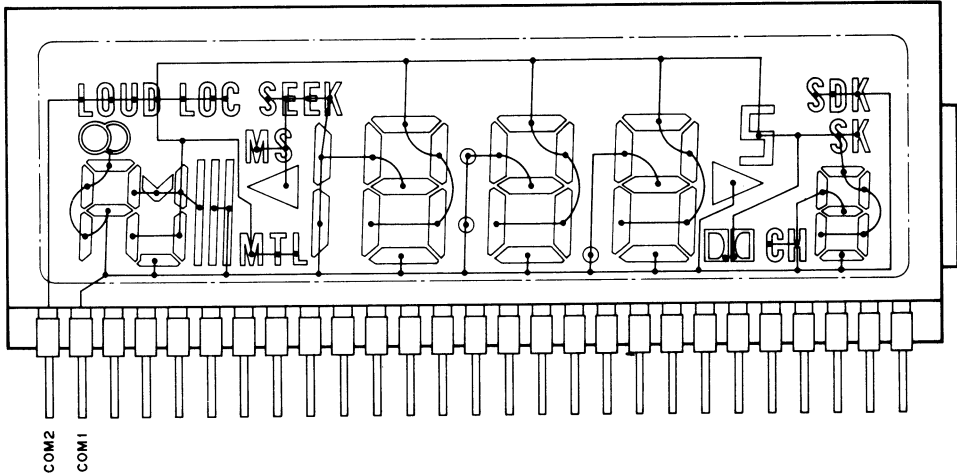
• LCD (CZA2987)

SEGMENT



B

COMMON



C

D

Fig. 17

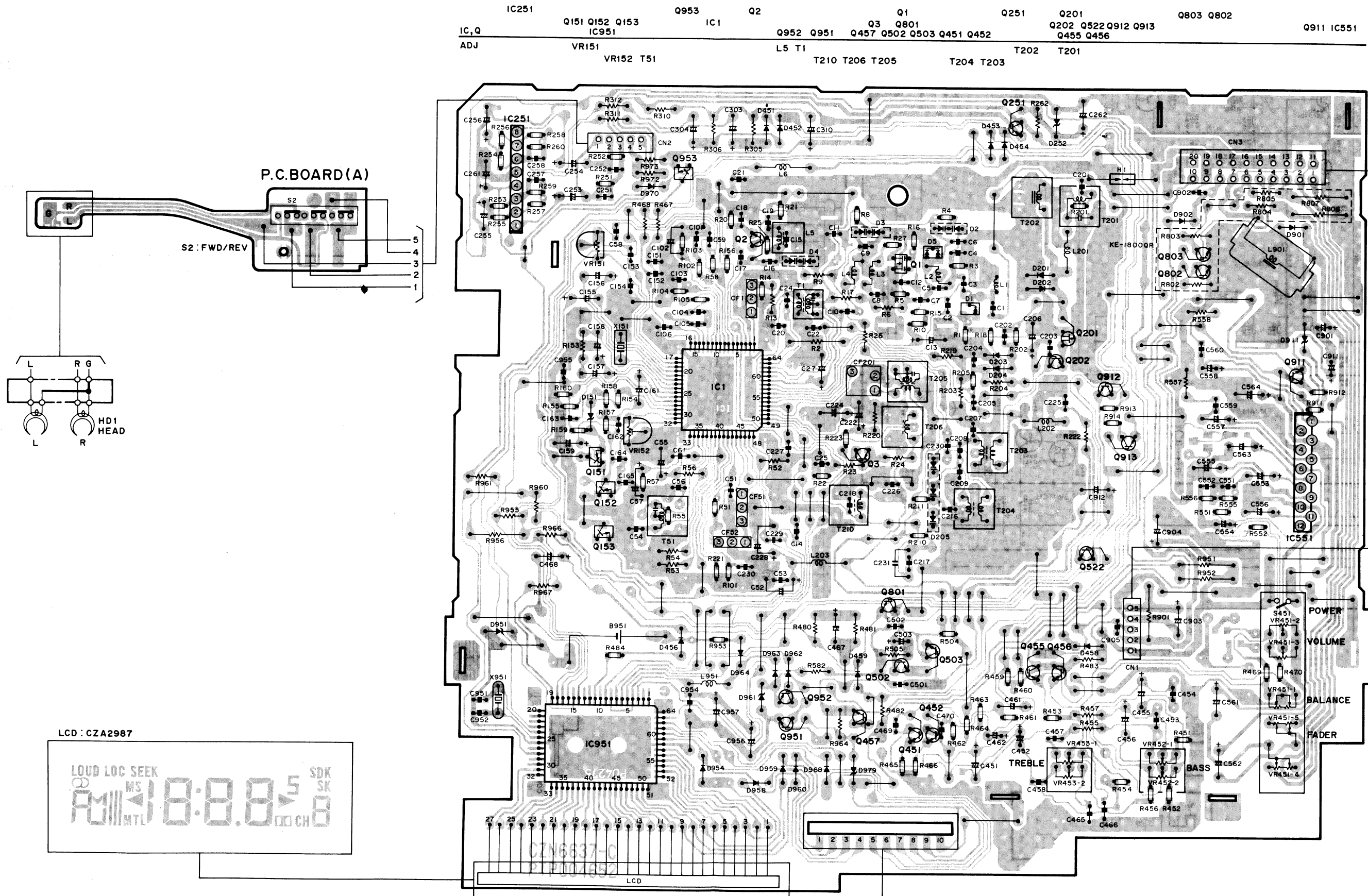
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8

9

## 9. CONNECTION DIAGRAM (KE-1303QR/KE-1800QR)

## TUNER AMP P.C.BOARD

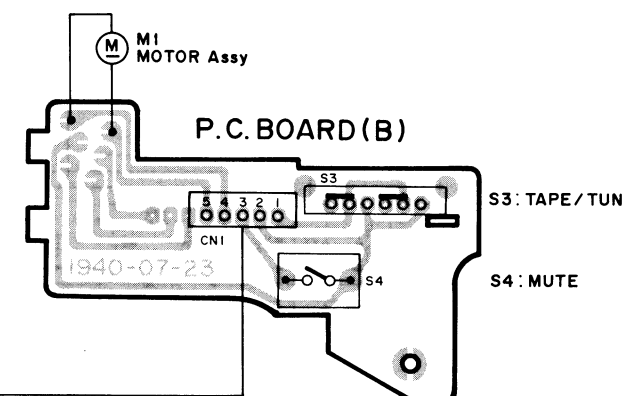
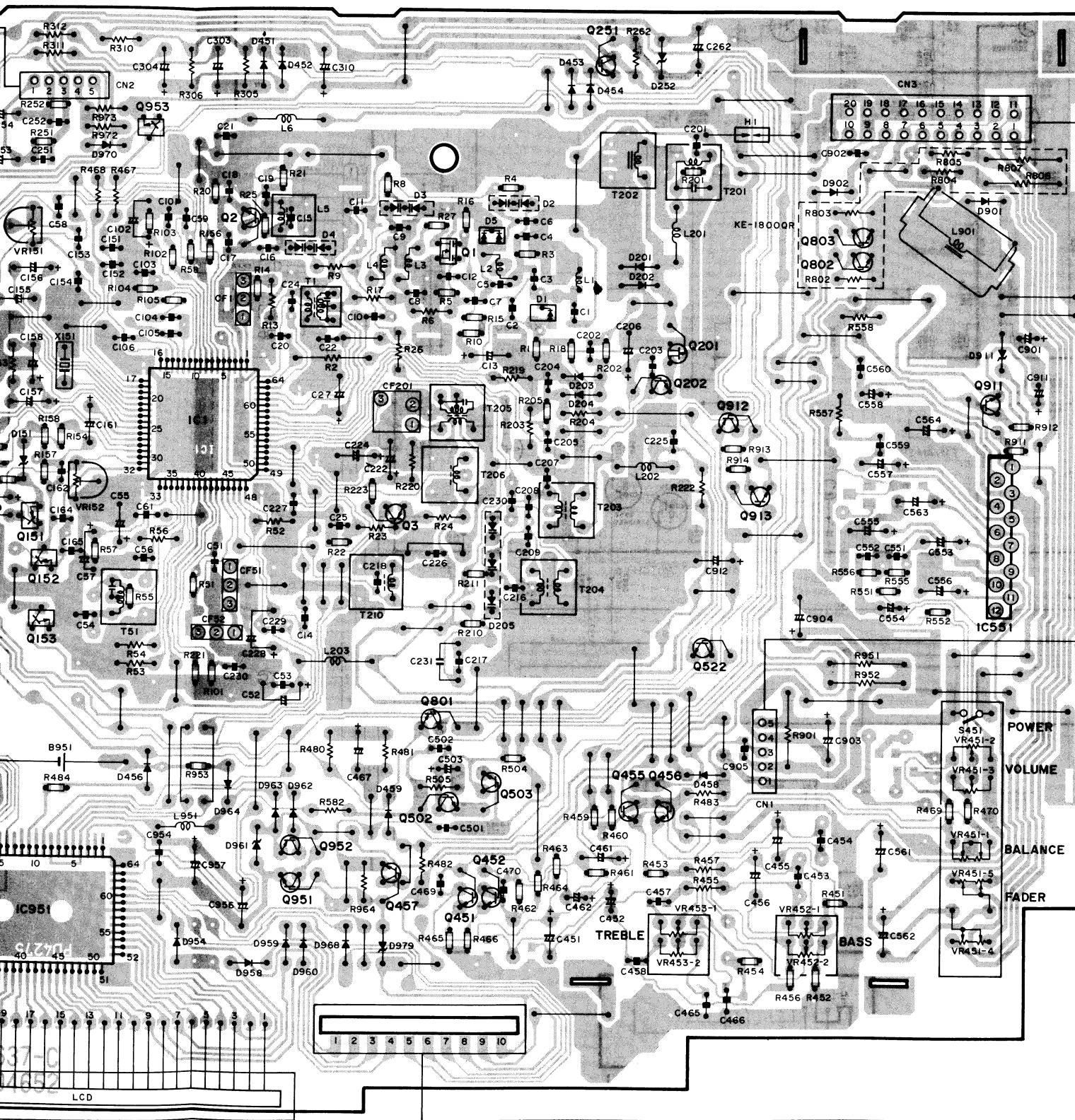




R)

## P.C. BOARD

Q953 Q2 Q1 Q251 Q201 Q803 Q802  
 IC1 Q3 Q801 Q202 Q522 Q912 Q913 Q911 IC551  
 Q951 Q457 Q502 Q503 Q451 Q452 Q455 Q456  
 VR151 VR152 T51 L5 T1 T210 T206 T205 T204 T203 T202 T201



## KEY BOARD UNIT

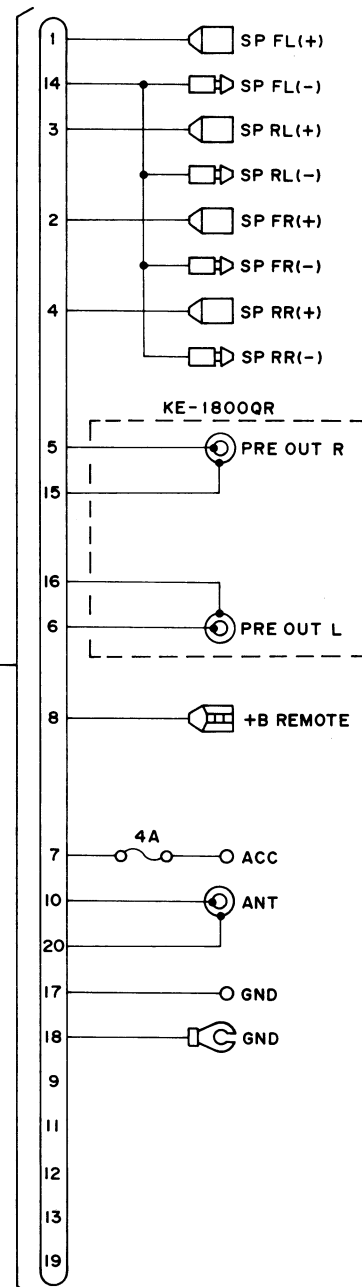
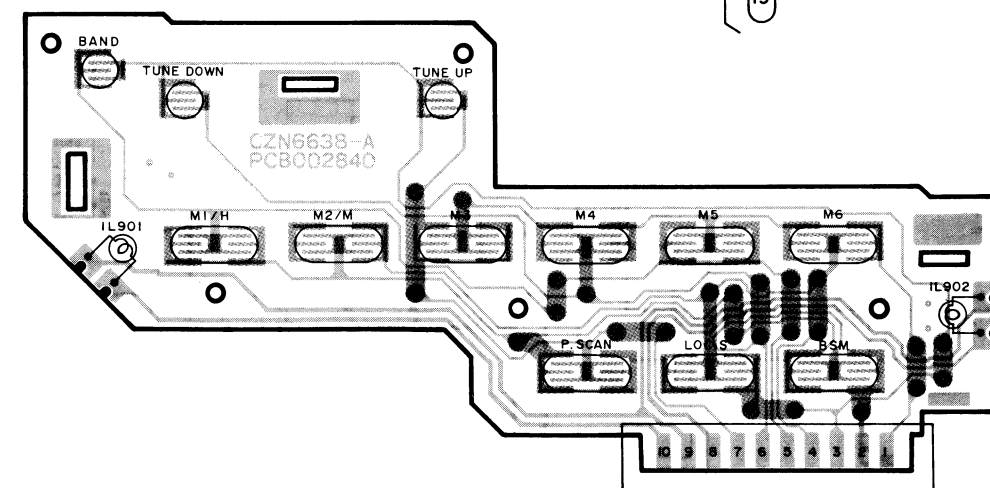


Fig. 18

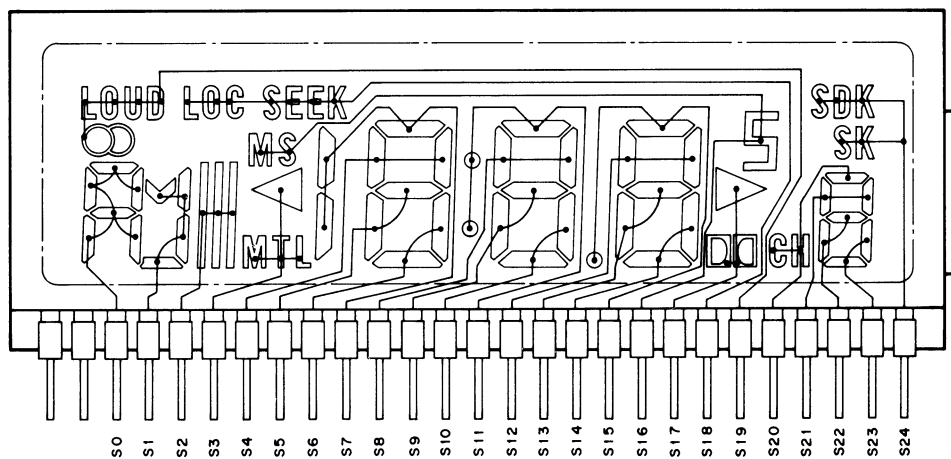
## 22



Tuner Amp Unit
Consists of
• Tuner Amp P. C. Board

- LCD

# SEGMENT



# COMMON

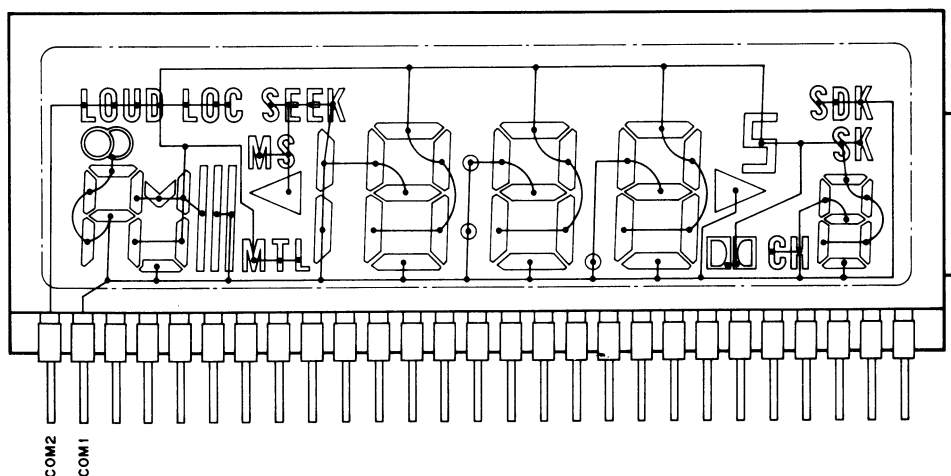


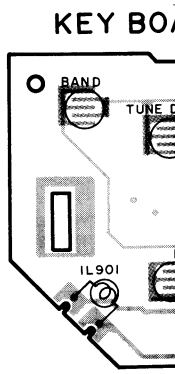
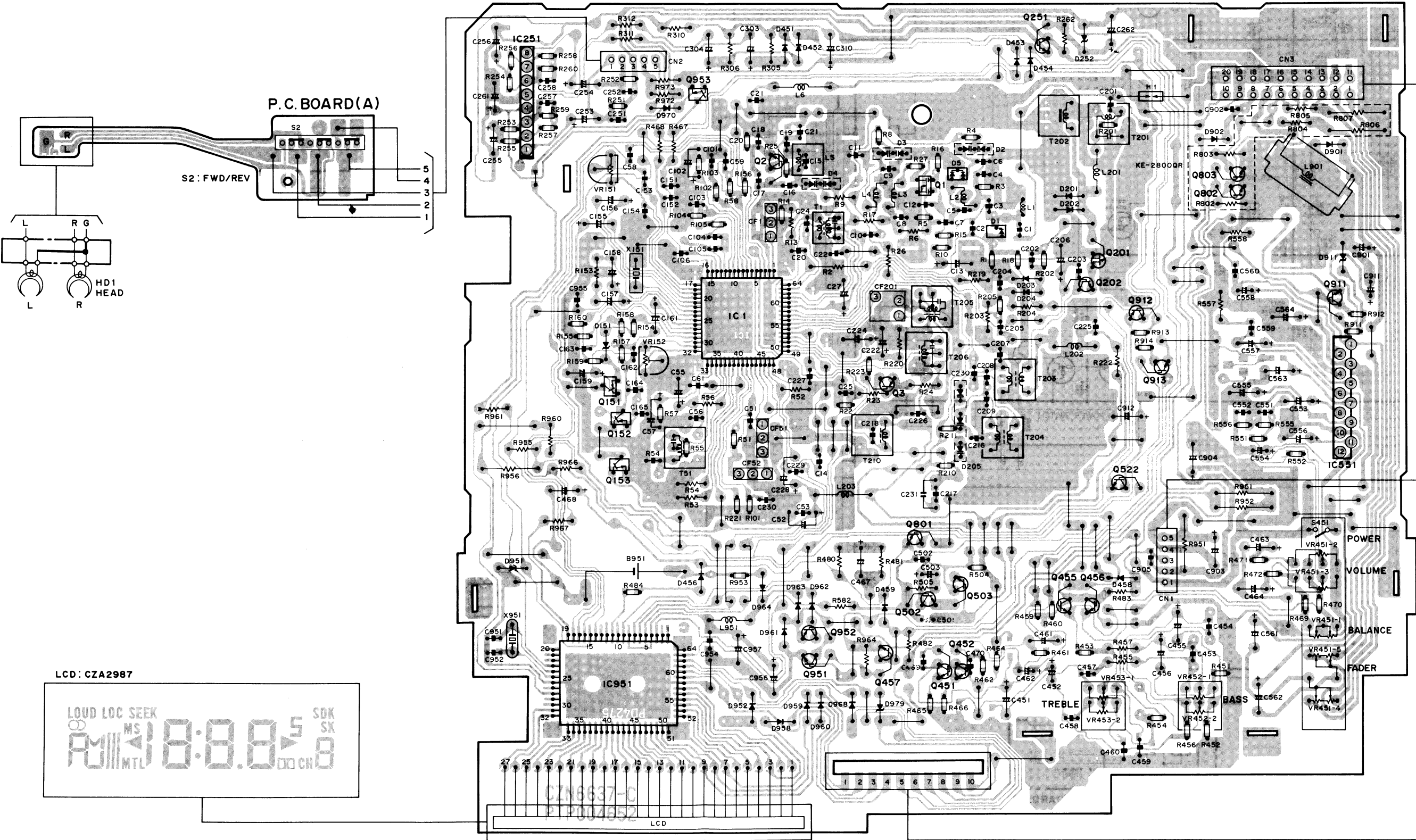
Fig. 19



11. CONNECTION DIAGRAM (KE-2800QR/KE-2850QR)

TUNER AMP P.C. BOARD

IC, Q		Q151 Q152 Q153		Q953	Q2	Q1		Q251	Q201	Q803 Q802		Q911 IC551	
		IC951		IC1		Q3	Q801		Q202 Q522 Q912 Q913				
ADJ		VR151			L5 T1	Q457 Q502 Q503 Q451 Q452		T202	T201				
		VR152 T51			T210 T206 T205	T204 T203							



1

2

3

25

4

5

6

26

A

B

C

D

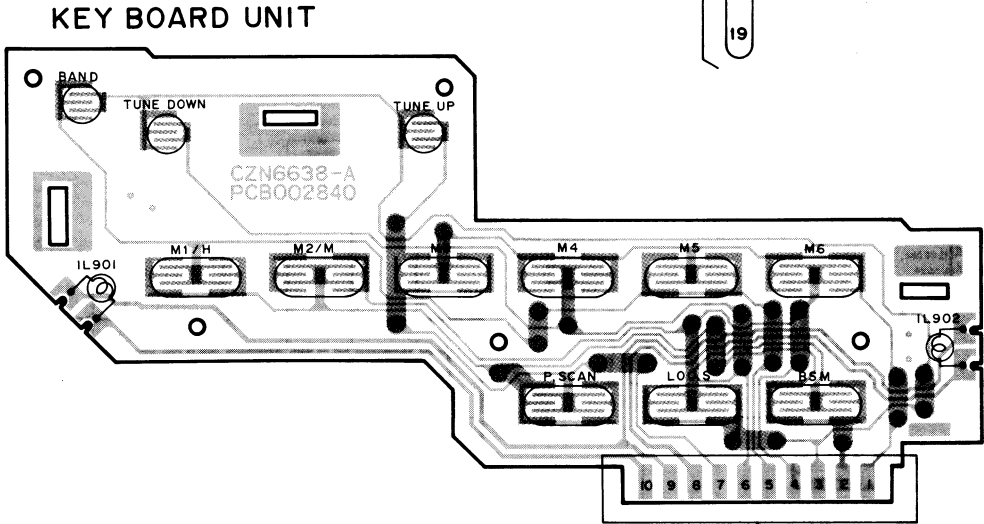
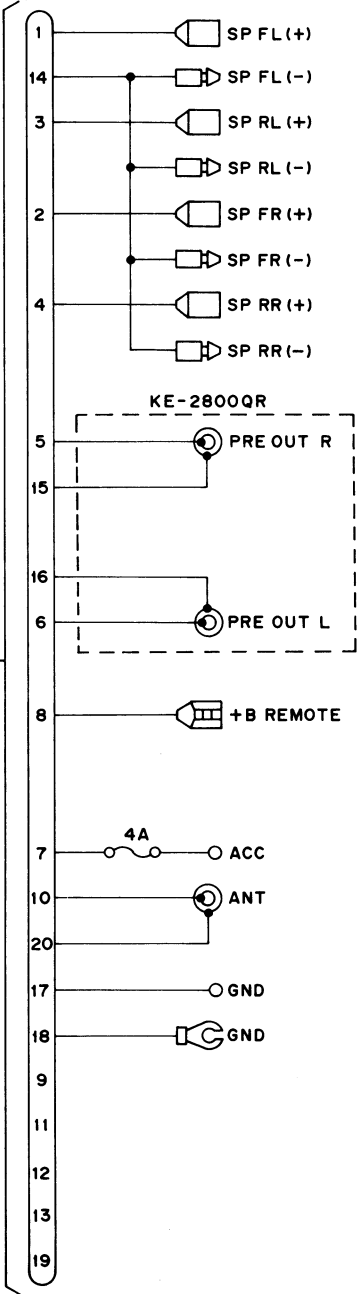
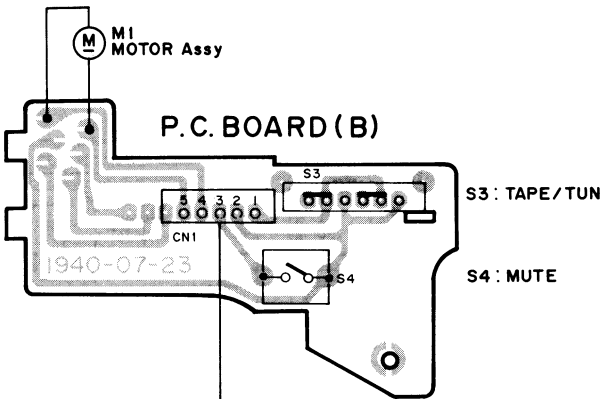


Fig. 20



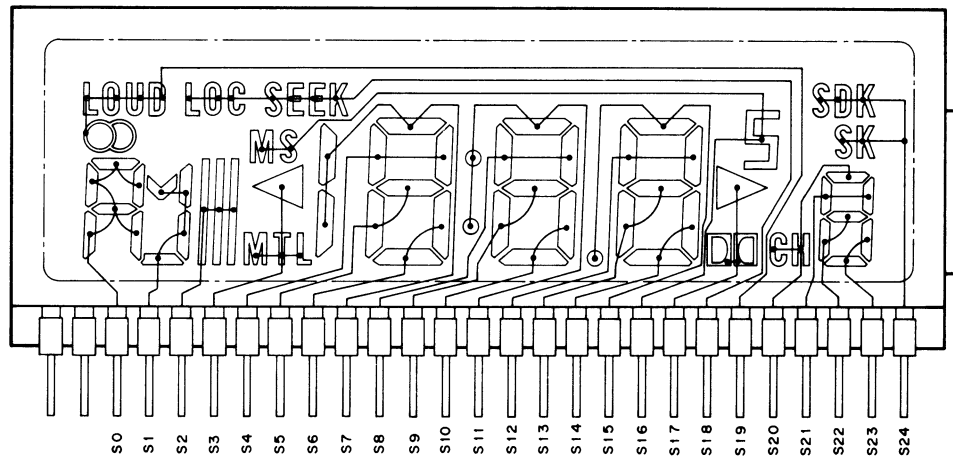


Tuner Amp Unit
Consists of
• Tuner Amp P. C. Board

A

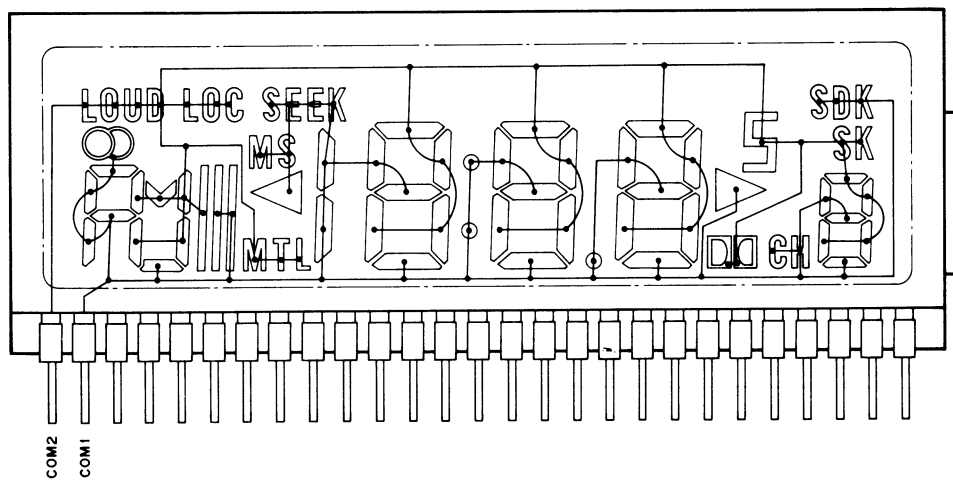
- LCD (CZA2987)

### SEGMENT



B

### COMMON



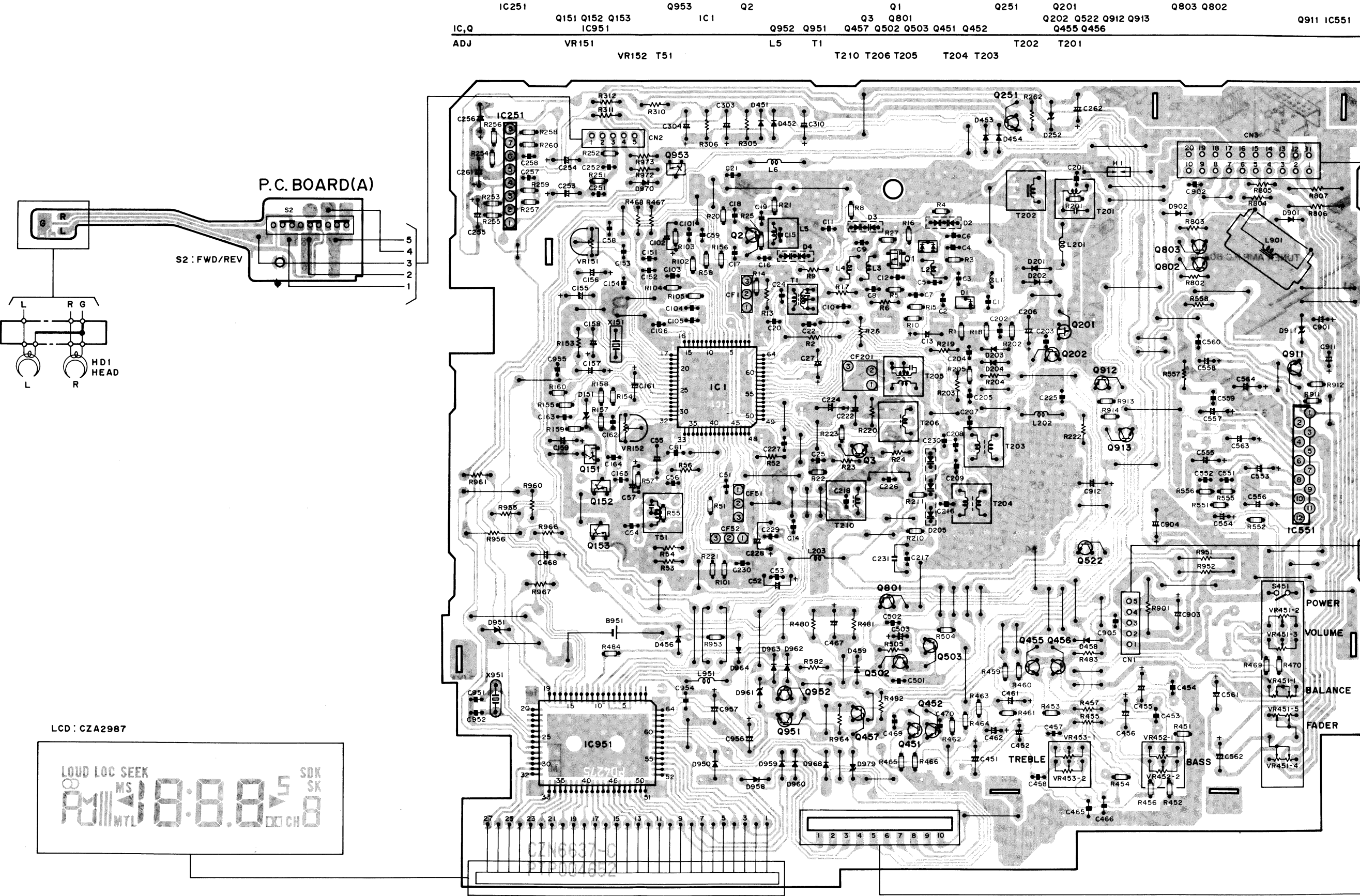
C

D

Fig. 21

13. CONNECTION DIAGRAM (KE-2800B)

TUNER AMP P.C. BOARD





NER AMP P.C. BOARD

IC251 Q151 Q152 Q153 Q953 Q2 Q1 Q251 Q201 Q803 Q802 Q911 IC551  
 IC951 Q952 Q951 Q457 Q502 Q503 Q451 Q452 Q202 Q522 Q912 Q913 Q455 Q456 T202 T201  
 VR151 VR152 T51 L5 T1 T210 T206 T205 T204 T203

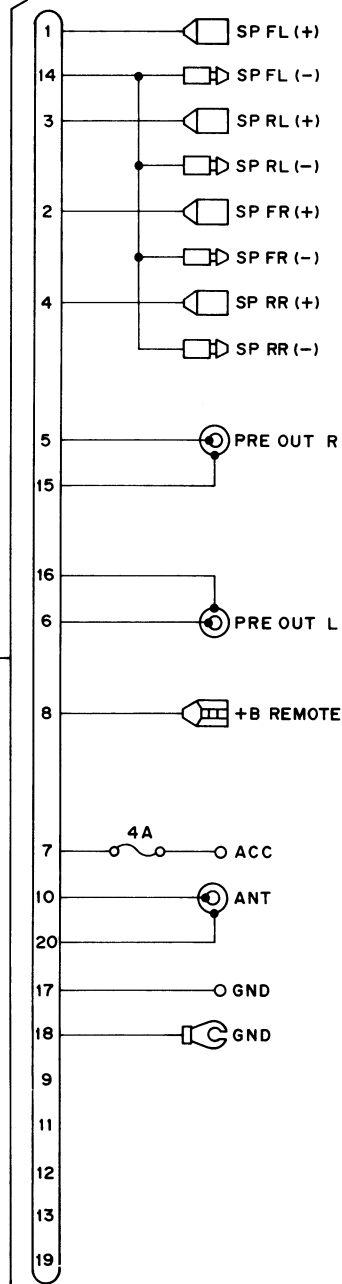
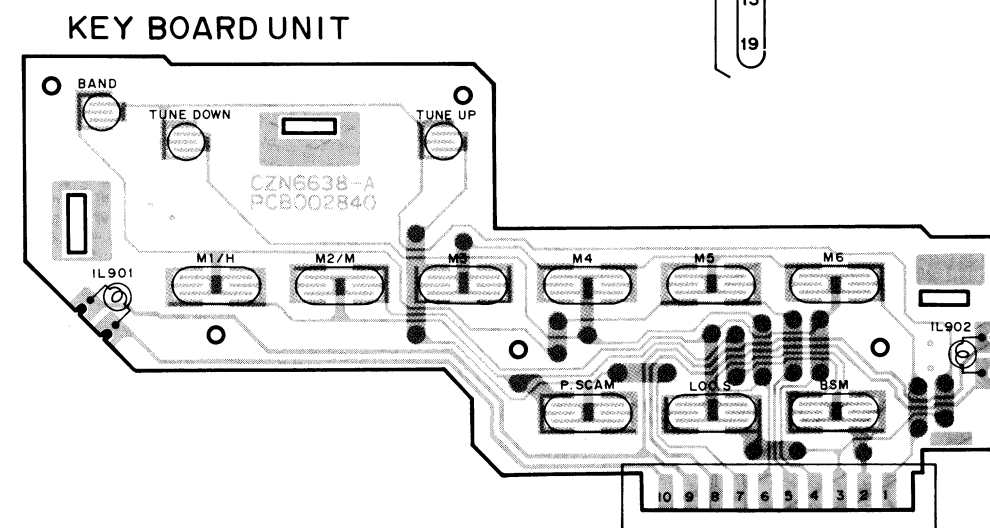
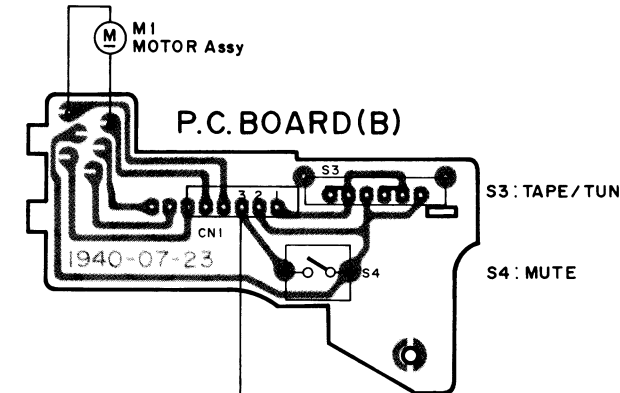
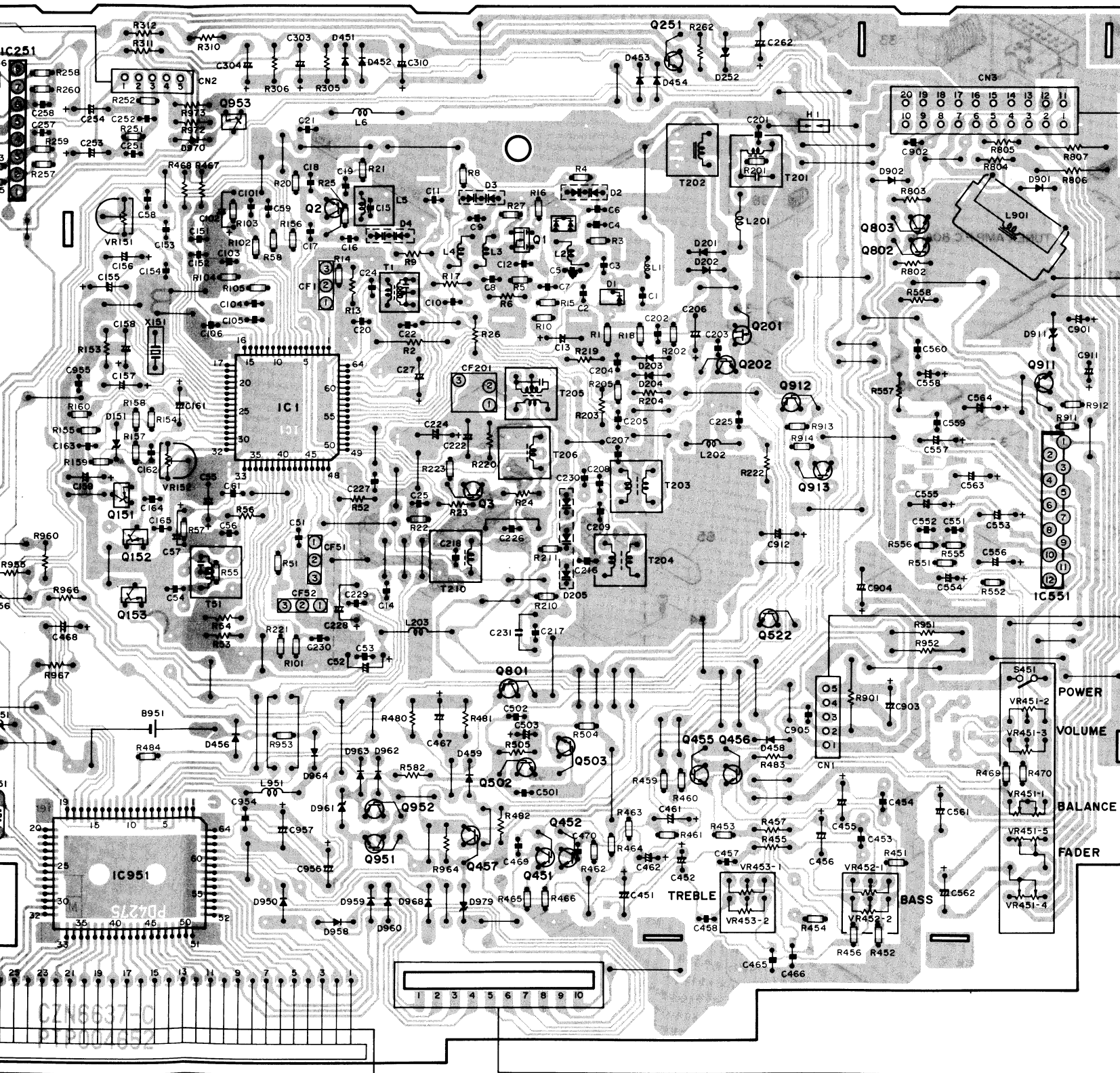


Fig. 22

# 14. CHASSIS EXPLODED VIEW

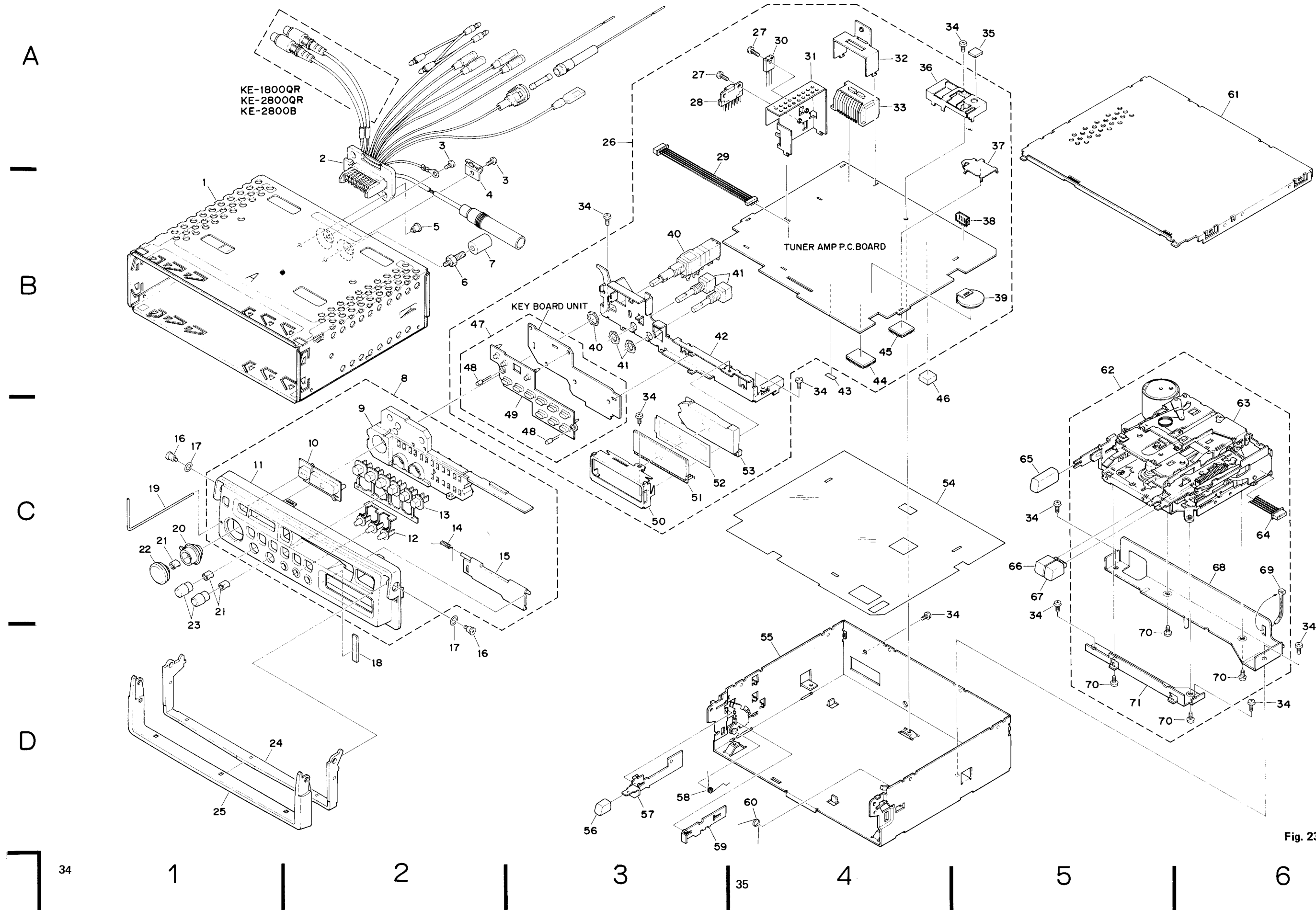


Fig. 23

NOTES:

- Parts marked by "\*" or "\*" are generally unavailable because they are not in our Master Spare Parts List.
- Parts marked by "●" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

• Parts List (KE-1303QR/XMA/UC)

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	Box	CZN6627		36	Case	CZN5558
	2	Cord Assy	CZD2959		37	Shield	CZN5557
	3	Screw	BSZ30P050FMC		38	Plug (5P) (CN2)	CZK2928
	4	Holder Cord	CZN6625		39	Battery	CEX1014
	5	Screw	CBA1073		40	Volume (VR451, S451)	CZC2631
	6	Screw	CBA1002		41	Volume (VR452, 453)	CZC2633
	7	Bush	CNV1009		42	Bracket	CZN6620
●	8	Grille Assy	CZX2974		43	Insulator	CZN6644
	9	Lens	CZN6632		44	IC (IC951)	PD4275B
	10	Button (TUNE)	CZA2979		45	IC (IC1)	LA1883M
	11	Grille	CZN6641		46	Cushion	CZN6647
	12	Button (FUNCTION)	CZA2980	●	47	Key Board Unit	CZW2965
	13	Button (PRESET)	CZA2978		48	Lamp (IL901, 902)	CZE2933
	14	Spring	CZB2967		49	Rubber	CZN6635
	15	Door	CZN6633		50	Bracket	CZN6626
	16	Screw	CZB2921		51	LCD	CZA2987
	17	Washer	CZB2968		52	Sheet	CZN6629
	18	Cushion	CZN6645		53	Lens	CZN6634
	19	Shaft	CZN5538		54	Insulator	CZN6628
	20	Knob (FADER)	CZA2982		55	Chassis Assy	CZN6617
	21	Spring	CZA2949		56	Button (DETACH)	CZA2986
	22	Knob (VOLUME/SWITCH)	CZA2981		57	Lever	CZN2985
	23	Knob (BASS, TREBLE)	CZA2943		58	Spring	CZB2919
	24	Handle	CZN6636		59	Lever	CZN2986
	25	Cover	CZN6631		60	Spring	CZB2918
●	26	Tuner Amp Unit	CZX2970	●	61	Cover	CZN6619
	27	Screw	BSZ30P080FMC		62	Cassette Mechanism Assy	CZW2970
	28	IC (IC551)	TA7281P		63	Cassette Mechanism	CZX2947
	29	Connector (5P) (CN1)	CZD2952		64	Connector (5P) (CN2)	CZD2951
	30	Transister (Q911)	2SD1684		65	Button (EJECT)	CZA2985
	31	Bracket	CZN6623		66	Button (REW)	CZA2984
	32	Holder	CZN6624		67	Button (FF)	CZA2983
	33	Plug (20P) (CN3)	CKS1977		68	Bracket	CZN6622
	34	Screw	BSZ26P060FMC		69	Cable Tie	CZM2901
	35	Cushion	CZN6646		70	Screw	PMZ30P040FUC
					71	Bracket	CZN6621

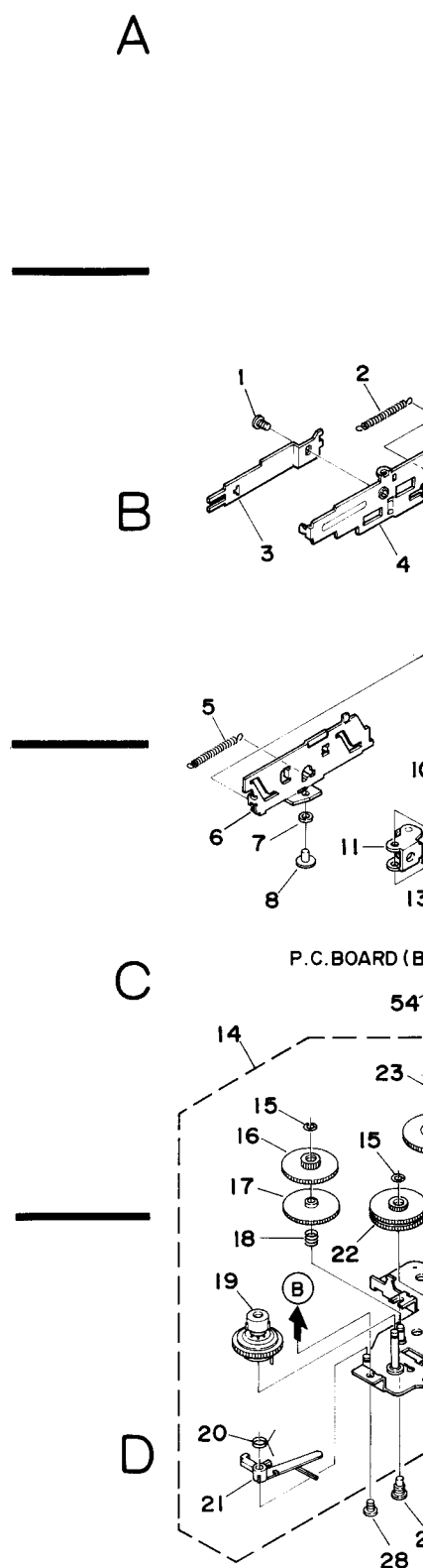
- The KE-1800QR/XMA/UC, KE-2800QR/XMA/ES, KE-2850QR/XMA/ES, and KE-2800B/XMA/EW Parts Lists enumerate the parts which differ from those enumerated in the KE-1303QR/XMA/UC Parts List only.  
The parts other than those enumerated in the former are identical with those in the latter, to which you are requested to refer, accordingly.  
The KE-1303QR/XMA/UC Parts List is given on page 36.

			KE-1303QR/XMA/UC	KE-1800QR/XMA/UC	KE-2800QR/XMA/ES	KE-2850QR/XMA/ES	KE-2800B/XMA/EW
Mark	No.	Description	Part No.	Part No.	Part No.	Part No.	Part No.
●	2	Cord Assy	CZD2959	CZD2958	CZD2959	CZD2958	CZD2958
	8	Grille Assy	CZX2974	CZX2968	CZX2976	CZX2972	CZX2978
	11	Grille	CZN6641	CZN6630	CZN6642	CZN6640	CZN6643
●	26	Tuner Amp Unit	CZW2970	CZW2961	CZW2973	CZW2966	CZW2976
	41	Volume	CZC2631	CZC2631	CZC2632	CZC2632	CZC2631
	48	Lamp	CZE2933	CZE2933	CZE2933	CZE2933	CZE2934

5. CASSETTE MECHANISM ASSY EXPLODED VIEW

• Parts List

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	Screw (M2.6×2.5)	CZB2950		46	E Ring (S2.0)	CZB2959		91	Screw	CZB2965
	2	Spring	CZB2933		47	Arm	CZN6607		92	Head (HD1)	CZX2958
	3	Lever	CZN5596		48	Screw (M2×3)	CZB2960		93	Screw	CZB2966
	4	Lever	CZN5598		49	Chassis Assy	CZN5566		94	Screw (M2×5)	CZB2951
	5	Spring	CZB2934		50	Motor Assy (M1)	CZX2959		95	Holder	CZN5571
	6	Plate	CZN5597		51	Washer (W1.5×3.2×0.5)	CZB2963		96	Washer	CZB2926
	7	Roller	CZL2911		52	Washer (W1.85×3.2×0.2)	CZB2962		97	Spring	CZB2925
	8	Roller	CZL2910		53	Gear	CZN6604		98	Screw (M2×5)	CZB2952
	9	Spring	CZB2939		54	Power Switch Assy	CZW2960		99	Washer (W2.1×4×0.4)	CZB2953
	10	Washer (W1.6×3.8×0.3)	CZB2954		55	Switch (S3) (TAPE/TUN)	CZS1912		100	Metal	CZN5568
	11	Pinch Roller Arm Assy	CZN5574		56	Screw	CZB2941		101	Washer (W10.3×14.2×0.4)	CZB2948
	12	Arm	CZN6610		57	Connector (5P) (CN1)	CZK2929		102	Gear	CZN5569
	13	Spring	CZB2938		58	Switch (S4) (MUTE)	CZS2913		103	Guide	CZN5570
	14	M.G. Plate Assy	CZX2961		59	P.C. Board	CZN5588		104	Plate	CZN5572
	15	Washer (W1.2×3×0.25)	CZB2957		60	Pulley	CZN6605		105	Roller	CZL2909
	16	Gear	CZN5578		61	Washer (W0.85×2.8×0.25)	CZB2944		106	Spring	CZB2924
	17	Gear	CZN5579		62	Spring	CZB2935		107	Head Panel Assy	CZN5567
	18	Spring	CZB2927		63	Spring	CZB2936				
	19	T. Reel Assy	CZN5577		64	Plate	CZN5599				
	20	Spring	CZB2928		65	Plate	CZN6609				
	21	Arm	CZN5587		66	FR Working Plate Assy	CZX2964				
	22	P. Clutch Assy	CZN5585		67	Gear	CZN6601				
	23	Washer (W1.6×3.4×0.3)	CZB2958		68	Plate Semi-Assy	CZN5600				
	24	Gear	CZN5580		69	Spring	CZB2937				
	25	Gear	CZN5581		70	Washer (W1.85×5×0.13)	CZB2961				
	26	M.G. Plate Semi-Assy	CZN5584		71	F.L. Capstan Assy	CZN6602				
	27	Screw	CZB2942		72	Belt	CZN6603				
	28	Screw (M2×3)	CZB2955		73	FR Lever Assy	CZX2963				
	29	Gear	CZN5582		74	Spring	CZB2945				
	30	E Ring (S1.5)	CZB2956		75	Lever	CZN6611				
	31	Plate	CZN5586		76	Lever	CZN6612				
	32	Plate	CZN5583		77	Screw (M2.6×4)	CZB2964				
	33	Cassette Case Assy	CZX2962		78	Spring	CZB2947				
	34	Spring	CZB2932		79	Plate	CZN6614				
	35	P.E Plate Assy	CZN5590		80	Plate Assy	CZN5576				
	36	Spring	CZB2930		81	F.R. Bracket Assy	CZN5575				
	37	Slider	CZN5594		82	Spring	CZB2946				
	38	Cushion	CZN5591		83	Plate	CZN6613				
	39	Screw (M1.7×2.5)	CZB2949		84	Pinch Roller Arm Assy	CZN5573				
	40	Plate	CZN5595		85	Plate	CZN6608				
	41	Lifter	CZN5589		86	Arm	CZN6606				
	42	Spring	CZB2929		87	Screw	CZB2940				
	43	Spring	CZB2931		88	Spring	CZB2943				
	44	Plate	CZN5593		89	Head Panel Assy	CZX2960				
	45	Case	CZN5592		90	Switch (S2) (FWD/REV)	CZS2911				



Mark	No.	Description	Part No.
	91	Screw	CZB2965
	92	Head (HD1)	CZX2958
	93	Screw	CZB2966
	94	Screw (M2x5)	CZB2951
	95	Holder	CZN5571
	96	Washer	CZB2926
	97	Spring	CZB2925
	98	Screw (M2x5)	CZB2952
	99	Washer (W2.1x4x0.4)	CZB2953
	100	Metal	CZN5568
	101	Washer (W10.3x14.2x0.4)	CZB2948
	102	Gear	CZN5569
	103	Guide	CZN5570
	104	Plate	CZN5572
	105	Roller	CZL2909
	106	Spring	CZB2924
	107	Head Panel Assy	CZN5567

• Cassette Mechanism Assy

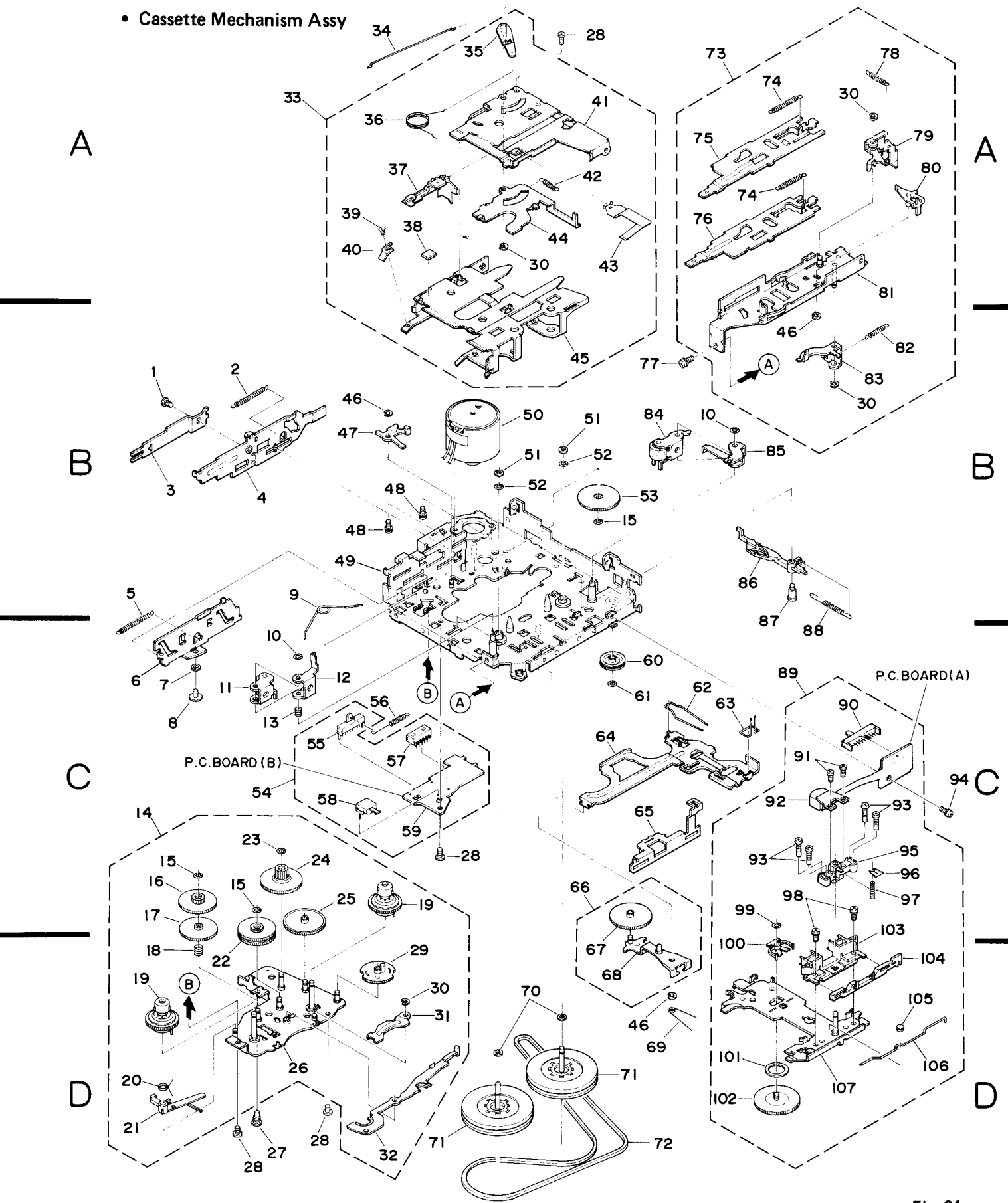


Fig. 24



16. PACKING METHOD

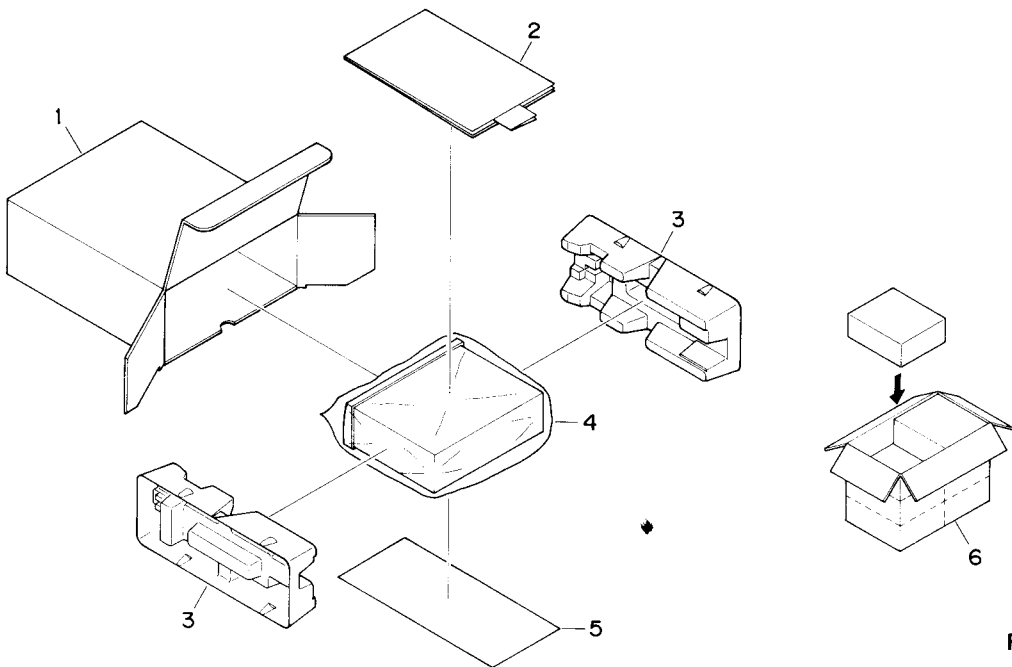


Fig. 25

• Parts List (KE-1303QR/XMA/UC)

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	Carton	CZH5528	5-1-4	Bush	CNV1009	
	2	Owner's Manual	CZR2918	5-1-5	Shaft	CZN5538	
*	2-1	Card	ARY1048	5-1-6	Strap	CZN2921	
	3	Protector (x2)	CZH5523	6	Contain Box	CZH5529	
*	4	Polyethylene Bag	CZE2903				
	5	Accessory Assy	CZE2935				
*	5-1	Polyethylene Bag	CZE2908				
	5-1-1	Screw (x1)	CBA-102				
	5-1-2	Nut (x2)	NF50FMC				
	5-1-3	Screw (x1)	CBA1002				

• The KE-1800QR/XMA/UC, KE-2800QR/XMA/ES, KE-2850QR/XMA/ES, and KE-2800B/XMA/EW Parts Lists enumerate the parts which differ from those enumerated in the KE-1303QR/XMA/UC Parts List only.  
The parts other than those enumerated in the former are identical with those in the latter, to which you are requested to refer, accordingly.  
The KE-1303QR/XMA/UC Parts List is given on page 40.

Mark	No.	Description	KE-1303QR/XMA/UC	KE-1800QR/XMA/UC	KE-2800QR/XMA/ES	KE-2850QR/XMA/ES	KE-2800B/XMA/EW
	1	Carton	CZH5528	CZH5524	CZH5531	CZH5526	CZH5533
	2	Owner's Manual	CZR2918	CZR2916	CZR2919	CZR2917	CZR2920
*	2-1	Card	ARY1048	ARY1048	.....	.....	CRY-062
	5	Accessory Assy	CZE2935	CZE2935	CZE2935	CZE2936	CZE2936
*	5-1	Polyethylene Bag	CZE2908	CZE2908	CZE2908	CZE2908	CZE-053
	5-1-1	Screw (x1)	CBA-102	CBA-102	CBA-102	.....	.....
	5-1-2	Nut (x2)	NF50FMC	NF50FMC	NF50FMC	.....	.....
	5-1-6	Strap	CZN2921	CZN2921	CZN2921	.....	.....
	6	Contain Box	CZH5529	CZH5525	CZH5532	CZH5527	CZH5534

Owner's Manual

Part No.	Language
CZR2916	English, French, Spanish
CZR2918	English, French, Spanish
CZR2917	English, French, Spanish, Arabic
CZR2919	English, French, Spanish, Arabic
CZR2920	English, French, Dutch, Spanish, Portuguese, Swedish, Finnish

17. ELECTRICAL PARTS LIST

NOTE:  
• Parts whose parts numbers are omitted are subject to being not supplied.  
• The part numbers shown below indicate chip components.  
Chip Resistor  
RS1/8S □□□J, RS1/20S □□□J  
Chip Capacitor (except for COS.....)  
CKS....., CCS....., CSZS.....

Unit Number:  
Unit Name: Tuner Amp Unit (KE-1303QR/XMA/UC)

Tuner Amp Unit
Consists of • Tuner Amp P. C. Board

MISCELLANEOUS

Circuit Symbol & No.	Part Name	Part No.	Circuit Symbol & No.	Part Name	Part No.
IC 1		LA1883M	L 3	Coil	CTC1090
IC 251		LA3161P	L 4	Coil	CTC1092
IC 551		TA7281P	L 5	OSC Coil	CTC1024
IC 951		PD4275B	L 6	Inductor	LAU150K
Q 1	Chip Transistor	3SK195	L 201 203	Ferri-Inductor	LAU4R7K
Q 2		2SC2999	L 202	Ferri-Inductor	LAU330K
Q 3		2SA933S	L 901	Chock Coil	CTH1084
Q 151 953	Chip Transistor	2SC2412K	L 951	Ferri-Inductor	LAU101K
Q 152	Chip Transistor	DTA124EK	T 1	Coil	CTC1064
Q 153	Chip Transistor	DTC124EK	T 51	Coil	CTC1071
Q 201		2SK435	T 201	Coil	CTB1056
Q 202 451 452 502 503 522		2SC1740S	T 202	Coil	CTB1008
Q 251		2SD1992A	T 203 204	Coil	CTB1058
Q 455 456 802 803		DTC343TS	T 205	Coil	CTE1041
Q 457 913		DTC124ES	T 206	Coil	CTE1042
Q 801 952		DTA124ES	T 210	Coil	CTB1061
Q 911		2SD1684	CF 1	Ceramic Filter	CTF-182
Q 912		2SA1150	CF 51 52	Ceramic Filter	CTF1284
Q 951		DTC114ES	CF 201	Filter	CTF1085
D 1	Chip Diode	1SV128A-BB	H 1		DSP-201M
D 2 3 4	Variable Capacitance Diode	SVC203-AB	X 151	Crystal Resonator	CSS1066
D 5	Chip Diode	MA157-MR	X 951	Crystal Resonator	CZS2914
D 151		MTZJ4R3C	VR 151	Semi-fixed 150KΩ	CZC2624
D 201 202 203 204 451 452 453 454		1SS133	VR 152	Semi-fixed 33KΩ	CZC2623
D 205	Variable Capacitance Diode	KV1235Z3	VR 451	Volume 50KΩ(W)×2, 50KΩ(A)×2	CZC2631
D 252 911		MTZJ9R1B	VR 452 453	Volume 50KΩ(A)×2	CZC2633
D 456 458 459 954 958 959 960 962		1SS133		LCD	CZA2987
D 901 902		ERA15-02VH			
D 951		MTZJ5R1B			
D 961		MTZJ5R6B			
D 963 968 970		1SS133			
D 964		RB721Q			
D 979		MTZJ8R2B			
L 1	Inductor	CTF1065			
L 2	Coil	CTC1091			

RESISTORS

Circuit Symbol & No.	Part No.
R 1 3 5 2	
R 2	
R 4 159 459 46	
R 6 955 956 96	
R 8	
R 9 52	
R 10 157 201 20	
R 13 17	
R 14 18 205	
R 15	
R 16	
R 20 155	
R 21	
R 23 961 966 97	
R 24	
R 25 223	
R 26 204 219 45	
R 27	
R 51 953	
R 53	
R 54	
R 55 102 104 15	
R 56	
R 57 210	
R 58 251 252	
R 101 555 556	
R 103	
R 105	
R 153	
R 154 484 504	
R 156	
R 203	
R 220	
R 221 253 254	
R 222	
R 255 256	
R 257 258	
R 259 260	
R 262 311 312 50	
R 305 306	
R 310 964	
R 451 452 551 55	
R 453 454	
R 457 458	
R 461 462	
R 463 464	
R 469 470 914	
R 465 466 912	
R 467 468	
R 480	
R 481	
R 482	
R 483 960	
R 557 558	
R 802 803	
R 804 805	
R 806 807	
R 901	
R 911	
R 951 952	

17. ELECTRICAL PARTS LIST

- NOTE:
- Parts whose parts numbers are omitted are subject to being not supplied.
  - The part numbers shown below indicate chip components.
- Chip Resistor  
RS1/8S □□□J, RS1/20S □□□J
- Chip Capacitor (except for COS.....)  
CKS....., CCS....., CSZS.....

Unit Number:  
Unit Name: Tuner Amp Unit (KE-1303QR/XMA/UC)

Tuner Amp Unit
Consists of
• Tuner Amp P. C. Board

MISCELLANEOUS					
Circuit Symbol & No.	Part Name	Part No.	Circuit Symbol & No.	Part Name	Part No.
IC 1	Chip Transistor	LA1883M	L 3	Coil	CTC1090
IC 251		LA3161P	L 4	Coil	CTC1092
IC 551		TA7281P	L 5	OSC Coil	CTC1024
IC 951		PD4275B	L 6	Inductor	LAU150K
Q 1		3SK195	L 201 203	Ferri-Inductor	LAU4R7K
Q 2	Chip Transistor	2SC2999	L 202	Ferri-Inductor	LAU330K
Q 3		2SA933S	L 901	Chock Coil	CTH1084
Q 151 953		2SC2412K	L 951	Ferri-Inductor	LAU101K
Q 152		DTA124EK	T 1	Coil	CTC1064
Q 153		DTC124EK	T 51	Coil	CTC1071
Q 201		2SK435	T 201	Coil	CTB1056
Q 202 451 452 502 503 522		2SC1740S	T 202	Coil	CTB1008
Q 251		2SD1992A	T 203 204	Coil	CTB1058
Q 455 456 802 803		DTC343TS	T 205	Coil	CTE1041
Q 457 913		DTC124ES	T 206	Coil	CTE1042
Q 801 952	Chip Diode	DTA124ES	T 210	Coil	CTB1061
Q 911		2SD1684	CF 1	Ceramic Filter	CTF-182
Q 912		2SA1150	CF 51 52	Ceramic Filter	CTF1284
Q 951		DTC114ES	CF 201	Filter	CTF1085
D 1		1SV128A-BB	H 1		DSP-201M
D 2 3 4	Variable Capacitance Diode	SVC203-AB	X 151	Crystal Resonator	CSS1066
D 5	Chip Diode	MA157-MR	X 951	Crystal Resonator	CZS2914
D 151		MTZJ4R3C	VR 151	Semi-fixed 150KΩ	CZC2624
D 201 202 203 204 451 452 453 454		1SS133	VR 152	Semi-fixed 33KΩ	CZC2623
D 205	Variable Capacitance Diode	KV1235Z3	VR 451	Volume 50KΩ(W)×2, 50KΩ(A)×2	CZC2631
D 252 911		MTZJ9R1B	VR 452 453	Volume 50KΩ(A)×2	CZC2633
D 456 458 459 954 958 959 960 962		1SS133		LCD	CZA2987
D 901 902		ERA15-02VH			
D 951		MTZJ5R1B			
D 961		MTZJ5R6B			
D 963 968 970		1SS133			
D 964		RB721Q			
D 979		MTZJ8R2B			
L 1	Inductor	CTF1065			
L 2	Coil	CTC1091			

RESISTORS			CAPACITORS		
Circuit Symbol & No.	Part Name	Part No.	Circuit Symbol & No.	Part Name	Part No.
R 1 3 5 22		RS1/10S223J	C 1 3 17 203 952		CCSQCH220J50
R 2		RD1/4PS151JL	C 2 21 53 58 205 225 226 232		CKSQYB473K25
R 4 159 459 460		RS1/10S333J	C 4 25 469 470		CCSQCH330J50
R 6 955 956 967		RD1/4PS473JL	C 5 207 209		CCSQTH090D50
R 8		RS1/10S563J	C 6		CCSQTH070D50
R 9 52		RD1/4PS563JL	C 7 202		CDSQ222K50
R 10 157 201 202 211 456 913		RS1/10S103J	C 8 22 51 54 59 105 204 216		CKSQYB223K50
R 13 17		RD1/4PS271JL	C 9		CCSQTH120J50
R 14 18 205		RS1/10S561J	C 10		CCSQSL271J50
R 15		RS1/10S683J	C 11 19 101 154 164 201 257 258		CKSQYB103K50
R 16		RS1/10S474J	C 12 24		CCSQCH470J50
R 20 155		RS1/10S182J	C 13 224		CEA3R3M50LS
R 21		RS1/10S182J	C 14 106 165 251 252 551 552		CKSQYB102K50
R 23 961 966 972		RD1/4PS472JL	C 15		CCSQCH100D50
R 24		RD1/4PS682JL	C 16 18		CCSQCH120J50
R 25 223		RS1/10S472J	C 20		CKSQYF104Z50
R 26 204 219 455		RD1/4PS103JL	C 27 52 912		CEA101M10LS
R 27		RS1/10S510J	C 55 155 156 157 451 468		CEA101M50LS2
R 51 953		RS1/10S331J	C 56		CCSQCH240J50
R 53		RD1/4PS104JL	C 57 222		CEAR47M50LS2
R 54		RD1/4PS133JL	C 61 954		CKSYB473K50
R 55 102 104 158 160 453 454		RS1/10S682J	C 102 206 262 563		CEA470M16LS
R 56		RD1/4PS562JL	C 103		CKSQYB182K50
R 57 210		RS1/10S473J	C 104		CKSQYB682K50
R 58 251 252		RS1/10S513J	C 151 152		CKSQYB223K50
R 101 555 556		RS1/10S133J	C 153		CKSQYB332K50
R 103		RS1/10S183J	C 158 455 456		CEAR22M50LS2
R 105		RS1/10S752J	C 159		CEA0R1M50LS2
R 153		RD1/4PS562JL	C 161		CEA100M16LS2
R 154 484 504		RS1/10S332J	C 162 163		CKSQYB152K50
R 156		RS1/10S684J	C 208		CCSQCH010C50
R 203		RD1/4PS513JL	C 217 230		CCSQRH101J50
R 220		RD1/4PS752JL	C 218		CCSQJ180J50
R 221 253 254		RS1/10S104J	C 227 229 501 502		CKSQYB223K50
R 222		RD1/4PS220JL	C 228 467		CEA220M16LS
R 255 256		RS1/10S181J	C 231		CQPA431J2A
R 257 258		RS1/10S153J	C 253 254		CEA2R2M50LS2
R 259 260		RS1/10S334J	C 255 256		CEA101M10L2
R 262 311 312 505 582 973		RD1/4PS102JL	C 261 555 556		CEA221M10L2
R 305 306		RD1/4PS153JL	C 303 304 310		CEA100M16L2
R 310 964		RD1/4PS331JL	C 452 901		CEA010M50LS2
R 451 452 551 552		RS1/10S152J	C 453 454		CKSQYB333K50
R 453 454		RS1/10E222J	C 457 458		CKSQYB272K50
R 457 458		RD1/4PS182JL	C 459 460		CKSYB273K50
R 461 462		RS1/10E394J	C 461 462		CEA2R2M50LS2
R 463 464		RS1/8S222J	C 503		CSZA2R2M16
R 469 470 914		RS1/10S222J	C 553 554		CEA010M50L2
R 465 466 912		RS1/10S221J	C 557		CEA47010LS2
R 467 468		RD1/4PS153JL	C 558		CEA470M10LS
R 480		RD1/4PS332JL	C 559 560		CKSQYB104K25
R 481		RD1/4PS223JL	C 561 562	1000μF/10V	CZC2630
R 482		RD1/4PS392JL	C 564		CEA471M16L2
R 483 960		RD1/4PS222JL	C 902 905 955		CKSQYB473K25
R 557 558		RD1/4PS2R2JL	C 903		CEA331M16LS
R 802 803		RD1/4PS390JL	C 904		CEHAQ472M16
R 804 805		RD1/4PS751JL	C 911	330μF/10V	CZC2634
R 806 807		RD1/2PS220JL	C 951		CCSQCH180J50
R 901		RS1/2P3R3JL	C 956 957		CEA221M101LS
R 911		RS1/10S471J			
R 951 952		RD1/2PS331JL			

# KE-1303QR/1800QR/2800QR/2850QR/2800B

- The KE-1800QR/XMA/UC, KE-2800QR/XMA/ES, KE-2850QR/XMA/ES, and KE-2800B/XMA/EW Parts Lists enumerate the parts which differ from those enumerated in the KE-1303QR/XMA/UC Parts List only.  
The parts other than those enumerated in the former are identical with those in the latter, to which you are requested to refer, accordingly.  
The KE-1303QR/XMA/UC Parts List is given on page 41.

Tuner Amp Unit	KE-1303QR/XMA/UC	KE-1800QR/MXA/UC	KE-2800QR/MXA/ES	KE-2850QR/MXA/ES	KE-2800B/XMA/EW
Symbol & No.	Part No.	Part No.	Part No.	Part No.	Part No.
Q 802 803	.....	DTC343TS	DTC343TS	.....	DTC343TS
D 950	.....	.....	.....	.....	1SS133
D 952	.....	.....	1SS133	1SS133	.....
D 954	1SS133	1SS133	.....	.....	.....
VR451	CZC2631	CZC2631	CZC2632	CZC2632	CZC2631
R 56	RD1/4PS562JL	RD1/4PS562JL	RD1/4PS183JL	RD1/4PS183JL	RD1/4PS183JL
R 467 468	RD1/4PS153JL	RD1/4PS153JL	RD1/4PS103JL	RD1/4PS103JL	RD1/4PS103JL
R 471 472	.....	.....	RS1/10S222J	RS1/10S222J	.....
R 802 803	.....	RD1/4PS390JL	RD1/4PS390JL	.....	RD1/4PS390JL
R 804 805	.....	RD1/4PS751JL	RD1/4PS751JL	.....	RD1/4PS751JL
R 806 807	.....	RD1/2PS220JL	RD1/2PS222JL	.....	RD1/2PS220JL
C 151 152	CKSQYB223K50	CKSQYB223K50	CKSQYB153K50	CKSQYB153K50	CKSQYB153K50
C 463 464	.....	.....	CEAR22M50LS2	CEAR22M50LS2	.....

Unit Number :

Unit Name : Key Board Unit

## MISCELLANEOUS

Circuit Symbol & No.	Part Name	Part No.
1L 901 902	Lamp 14V 40mA (KE-1303QR, 1800QR, 2800QR, 2850QR)	CZE2933
	Lamp 14V 40mA (KE-2800B)	CZE2934

Unit Number :

Unit Name : P.C. Board (A)

Circuit Symbol & No.	Part Name	Part No.
S 2	Switch (FWD/REV)	CZS2911

Unit Number :

Unit Name : P.C. Board (B)

Circuit Symbol & No.	Part Name	Part No.
S 3	Switch (TAPE/TUN)	CZS2912
S 4	Switch (MUTE)	CZS2913

## Miscellaneous Parts List

Circuit Symbol & No.	Part Name	Part No.
M 1	Motor Assy	CZX2959
HD 1	Head	CZX2958

## 18. SPECIFICATIONS

### KE-1303QR/KE-1800QR

#### General

Power source . . . . . 14.4 V DC (10.8 — 15.6 V allowable)  
 Grounding system . . . . . Negative type  
 Max. current consumption . . . . . 2.5 A  
 Dimensions (chassis) . . . . . 178(W) x 50(H) x 141(D) mm  
     [7(W) x 2(H) x 5-1/2(D) in.]  
     (nose) . . . . . 188(W) x 58(H) x 17.5(D) mm  
     [7-3/8(W) x 2-1/4(H) x 3/4(D) in.]  
     (mounting bracket) . . . . . 182(W) x 52(H) x 152.5(D) mm  
     [7-1/8(W) x 2(H) x 6(D) in.]  
 Weight . . . . . 1.3 kg (2.9 lbs.)

#### Amplifier

Continuous power output is 3.2 W per channel min. into 4 ohms, both channels driven 50 to 15,000 Hz with no more than 5% THD.  
 Maximum power output . . . . . 8.5 W x 2 / 7 W x 4 (EIAJ)  
 Load impedance . . . . . 4  $\Omega$  (4 — 8  $\Omega$  allowable)  
 Preout output level / output impedance . . . . . 500 mV/1 k $\Omega$   
 Tone controls (bass) . . . . .  $\pm 10$  dB (100 Hz)  
     (treble) . . . . .  $\pm 10$  dB (10 kHz)

#### Tape player

Tape . . . . . Compact cassette tape (C-30 — C-90)  
 Tape speed . . . . . 4.76cm/sec. (+0.14cm/sec. -0.05cm/sec.)  
 Fast forward /rewind time . . . . . Approx. 100 sec. for C-60  
 Wow & flutter . . . . . 0.13% (WRMS)  
 Frequency response . . . . . 40 — 14,000 Hz ( $\pm 3$  dB)  
 Stereo separation . . . . . 45 dB  
 Signal-to-noise ratio . . . . . 52 dB (IHF-A network)

### KE-2800QR/KE-2850QR/KE-2800B

#### General

Power source . . . . . 14.4 V DC (10.8 — 15.6 V allowable)  
 Grounding system . . . . . Negative type  
 Max. current consumption . . . . . 2.5 A  
 Dimensions (chassis) . . . . . 178(W) x 50(H) x 141(D) mm  
     (nose) . . . . . 188(W) x 58(H) x 17.5(D) mm  
     (mounting bracket) . . . . . 182(W) x 52(H) x 152.5(D) mm  
 Weight . . . . . 1.3 kg

#### Amplifier

Continuous power output is 3.2 W per channel min. into 4 ohms, both channels driven 50 to 15,000 Hz with no more than 5% THD.  
 Maximum power output . . . . . 8.5 W x 2 / 7 W x 4 (EIAJ)  
 Load impedance . . . . . 4  $\Omega$  (4 — 8  $\Omega$  allowable)  
 Tone controls (bass) . . . . .  $\pm 10$  dB (100 Hz)  
     (treble) . . . . .  $\pm 10$  dB (10 kHz)  
 Loudness contour . . . . . +8 dB (100 Hz) (Volume: -30 dB)

#### Tape player

Tape . . . . . Compact cassette tape (C-30 — C-90)  
 Tape speed . . . . . 4.76cm/sec. (+0.14cm/sec. -0.05cm/sec.)  
 Fast forward / rewind time . . . . . Approx. 100 sec. for C-60  
 Wow & flutter . . . . . 0.13% (WRMS)  
 Frequency response . . . . . 40 — 14,000 Hz ( $\pm 3$  dB)  
 Stereo separation . . . . . 45 dB  
 Signal-to-noise ratio . . . . . 52 dB (IEC-A network)

#### FM tuner

Frequency range . . . . . 87.9 — 107.9 MHz  
     87.5 — 108 MHz  
 Usable sensitivity . . . . . 11 dBf (1.0  $\mu$ V/75 $\Omega$ , mono, S/N: 30 dB)  
 50 dB quieting sensitivity . . . . . 16 dBf (1.0  $\mu$ V/75 $\Omega$ , mono)  
 Signal-to-noise-ratio . . . . . 70 dB (IHF-A network)  
 Distortion . . . . . 0.3% (at 65 dBf, 1 kHz, stereo)  
 Frequency response . . . . . 30 — 15,000 Hz ( $\pm 3$  dB)  
 Stereo separation . . . . . 40 dB (at 65 dBf, 1 kHz)  
 Selectivity . . . . . 70 dB (2ACA) ( $\pm 400$  kHz)  
 Three-signal intermodulation (desire signal level)  
     . . . . . 55 dBf (two undesire signal level: 110 dBf)

#### AM tuner

Frequency range . . . . . 530 — 1,710 kHz  
 Usable sensitivity . . . . . 18  $\mu$ V (25 dB) (S/N: 20 dB)  
 Selectivity . . . . . 50 dB ( $\pm 10$  kHz)

*These specifications were determined and are presented in accordance with specification standards established by the Ad Hoc Committee of Car Stereo Manufacturers.*

#### Note:

Specifications and the design are subject to possible modification without notice due to improvements.

#### FM tuner

Frequency range . . . . . 87.5 — 108 MHz  
 Usable sensitivity . . . . . 11 dBf (1.0  $\mu$ V/75 $\Omega$ , mono, S/N: 30 dB)  
 50 dB quieting sensitivity . . . . . 16 dBf (1.0  $\mu$ V/75 $\Omega$ , mono)  
 Signal-to-noise-ratio . . . . . 70 dB (IEC-A network)  
 Distortion . . . . . 0.3% (at 65 dBf, 1 kHz, stereo)  
 Frequency response . . . . . 30 — 15,000 Hz ( $\pm 3$  dB)  
 Stereo separation . . . . . 40 dB (at 65 dBf, 1 kHz)

#### AM tuner [MW tuner]

Frequency range . . . . . 531 — 1,602 kHz (9 kHz)  
     530 — 1,710 kHz (10 kHz)  
 Usable sensitivity . . . . . 18  $\mu$ V (25 dB) (S/N: 20 dB)  
 Selectivity . . . . . 50 dB ( $\pm 9$  kHz)  
     50 dB ( $\pm 10$  kHz)

#### Note:

Specifications and the design are subject to possible modification without notice due to improvements.